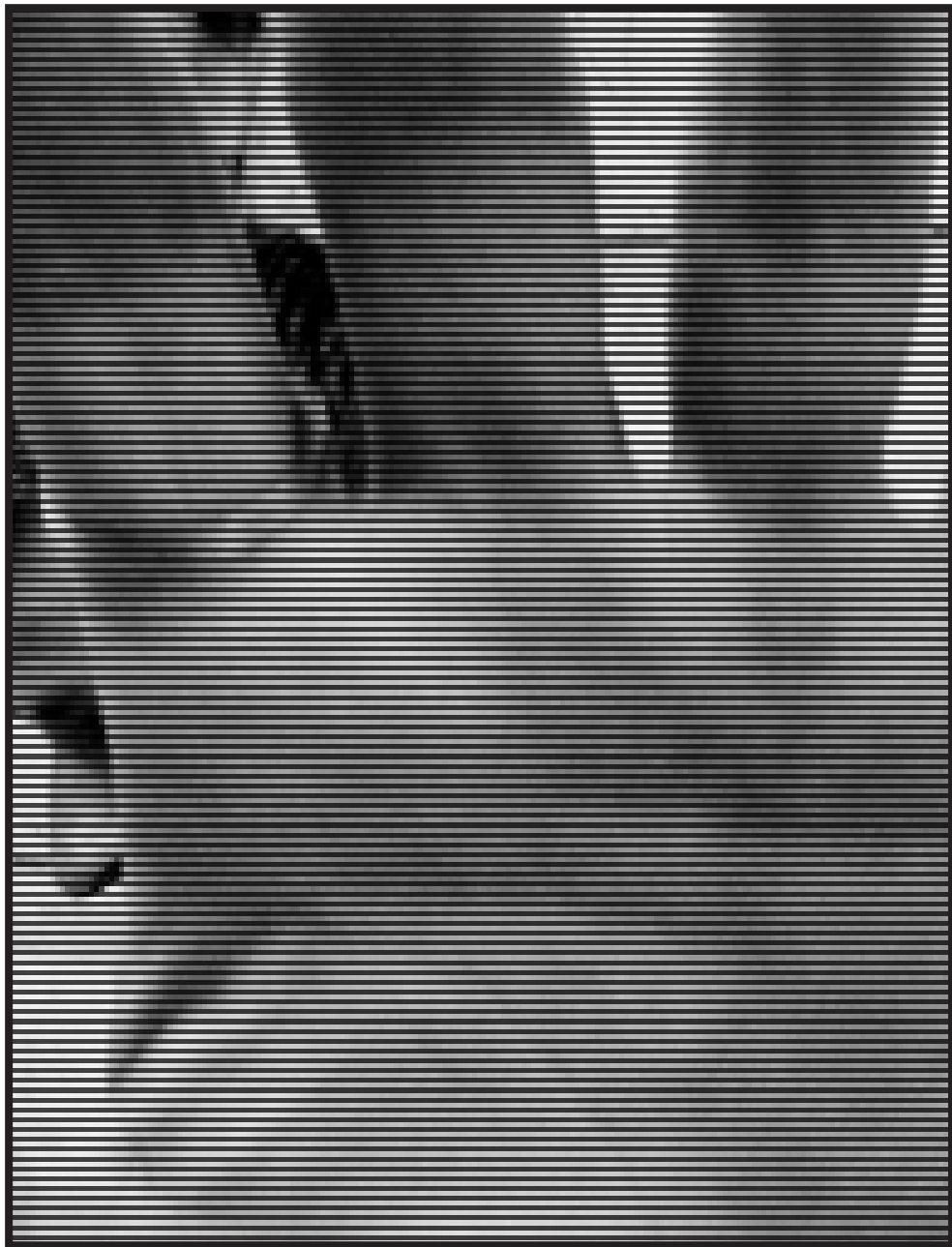


NEXT 5 MINUTES

INTERNATIONAL FESTIVAL OF TACTICAL MEDIA SEPTEMBER 11-14, 2003



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THE TACTICS OF APPROPRIATION!

“Can Tactical media anticipate, rather than be merely reactive?

We require a better theory, but one that is simultaneously a better practice. A practice one might call: strategies for tactical media. Not a strategic media, but a strategic depth of concepts and competences for engaging with the event-space of media in the moments when it is in crisis.”

- *McKenzie Wark* -

From its earliest articulations, tactical media practitioners have always recognised "appropriation" as one of the prime constitutive elements of the tactical. From the re-purposing of the fruits of the consumer electronics industry, (exploiting video's forensic immediacy to institute a subject centred realism) through to later phases of new media tactics, as evinced by the work of groups like RTMark, and the practices of logo tinkering, and imposturing, blossoming on the Net. Thus rather than complaining about the speed with which our tactics are stolen it is time to recognise that tactical media has been in the appropriation game all along.

Indeed it is in the precise moment of appropriation that power becomes momentarily visible. And here lies the opportunity for the balance of power to be re-defined, for the weak once again to turn the tables on the strong. Appropriation is the name of the game. The important question is who appropriates whom?

There are some who would rather seek solace in the belief that a new social movement is emerging from the formation of alliances between a multitude of heterogeneous critical groups and micro-movements. But those who believe that mass movements are immune from appropriation should observe the ease with which Chirac together with a coalition of EU member states have appropriated the mass peace demonstrations to legitimise their geo-political stance vis-à-vis America. The scope and logic of appropriation are infinite. Here as elsewhere power exists both where it is enacted and where it is being challenged.

If appropriation is indeed one of the crucial operators of media politics, the question how that condition can be effectively addressed (rather than escaped from), is especially important. So we can ask questions like: in what ways are opposition politics these days constrained by logics of appropriation? And how can we conceive of appropriation as something that enables instead of threatens antagonistic politics?

FRAMING TACTICAL MEDIA

By Critical Art Ensemble, January 2003

Anyone involved with "tactical media" (TM) before its famed christening in 1996 at the Next Five Minutes had to know that naming this cultural/political tendency was going to have some very negative repercussions. The naming was the first step in doing what TM feared the most - claiming cultural territory doomed to house haunting archives. Once given an official title, so many nasty processes could begin - most significantly, the construction of historical narratives. So many narratives already exist explaining this ephemeral, immediate, specific, and deterritorialized process of cultural production that seemed so urgent to so many radical subjects in the early 90s. To name but a few of these explanations: strategic political movements were in a valley period; postmodernist thought had connected the strategic to the repulsive category of the universal; after the fall of the Soviets, the global capitalist juggernaut appeared uncontestable, leaving immediate micro-subversion as the only effective option; or even the growing interest in developing new interdisciplinary research methods that encouraged dialogue among forces of knowledge production. The list goes on and is as varied as the individuals who drifted into tactical forms of production, unfortunately what was originally a long, diverse list of causalities will in all likelihood be shortened and homogenized.

Perhaps there are more immediate problems since bureaucratization and historicization are slow. First, rather than being refined into a pure consumable unit, TM is currently an unruly catch-all. To borrow from Naomi Klein, TM is the "alt.everything" of culture/politics. Tacticality is only one of the many currents of resistant possibility converging at a cultural/political vector of resistance that for lack of a better term is now called TM. Is anyone really surprised? Wherever there is energy and action there is also a tremendous attraction by many different cultural vectors to this form of postmodern wealth - this is the process of decadence (not meant in a moral or pejorative way, but in the Spenglerian sense, or perhaps now the Negrian sense) in its most simple form. Within this enclosed environment of cultural and political sprawl, possibilities can appear as competitors, and with that appearance comes counterproductive binary separations and a desire for a past singularity that never existed. Again, there is nothing shocking in this situation; rather, it is a very easily recognized pattern that has been spoken about for a long time. Indeed, a very long time.

EGOISM AND COLLECTIVISM

CAE would like to revisit a very old argument that flared most intensely when the Anarchist movement was at its peak (1890-1910) - the contradiction between the egoists and the collectivists. While they were all a part of anarchist coalitions, they never really trusted one another. On the one hand, from Bakunin to Berkman, the collectivists insisted that the only real power that the revolutionary class had was their overwhelming number. (A very smart assumption at that.) Given that the mass is its own weapon, its power could only be realized through organization. Without organization, and without the individual knowledge gained in the process of organizing (knowing one's true relationship to the forces of production), no revolution (only uprisings - uninformed, nonsystematic resistances) could occur. From this position, the collectivists believed that the egoist privileging of the individual is naive if not counter-revolutionary. The egoists had carried the

principle of decentralization to a point of absurdity. For the collectivists, decentralization was a social category that could manifest as limited in number and modest in locality, but could never be reduced to the individual. After all, humans are social animals (Aristotle lives on). The other problem for the collectivists was that the egoists had no future vision. If capitalism was overthrown, then what was to be done? The egoists had no answer. The collectivists, like the socialists and the communists, had their utopia planned and ready for inspection. And how could they not? If a revolutionary force wants to convince people to fight for a social cause, they better have a final cause to show why it is in the interest of the people to participate. The lack of a utopian model puts one at a significant disadvantage whether one is struggling against a glorious eternity in heaven or the American dream. As Stanley Aronowitz bemoaned at the beginning of the Reagan Revolution, what does the left (having rejected all concepts of utopia) have to offer besides a vague concept of social justice that lacks concrete social structure?

On the other hand, the egoists had just as little sympathy for the collectivists. As John Henry Mackay argued in *The Anarchist*, the collectivists are anarchists who are unaware that they are really communists. The egoists, guided by the works of Stirner and Nietzsche, believed that the foundation of anarchism was the liberation of the individual - the right of the individual to he/r given sovereignty, or conversely, not to be a slave to any social institution or convention. Nothing came before this principle, because it was the only way to be sure that oppressive relationships inherent in institutions and social systems would not reassert themselves. The collective represented just another form of institutional oppression, especially in the way it was conceived as functioning after the revolution. The egoists had a vague idea of what we might call a self-organizing system today (probably a variation on mutualist notions of social organization), but they had no real plans for the revolution or life after it.

What annoyed the egoists even more was the disciplinary sensibility of the collectivists. The Enlightenment "man as machine model" was seen as an insult to human dignity. Questions of individual desire had to be addressed and desire itself had to be expressed (and in more ways than "free love" could accommodate). Efficiency and rationality should not be one's sole guides to life. The nonrational side of individuals must have a significant place in all matters of production. This was an early call for the marriage of the political and the poetic that Gregg Bordowitz has recently insisted on reviving. Mackay would be a mythic example of this possibility.

THE DEBATE CONTINUES

The argument between the collectivists and the egoists seems very similar to the current division between the strategists and the tacticalists. To be sure, real differences do exist between the two that tend to reside in their respective functional tendencies. These tendencies have to be recognized if some of the current confusion around "alt.everything" is to be cleared away.

At present, resistant strategy has two key interests: quantity and reactivity. (Hopefully, the latter will be transformed at some point.) The situation is the same as early in the last century. The power of the multitude is in number, and the goal of the strategist is to organize it (perhaps network it) so that it can effectively react to what global or localized capital does to further consolidate its power over it. Given strategy's relationship to reactivity it connects best to a specific set of principles that are reminiscent of collectivist

action. Strategy requires efficiency (rationalization) - now more than ever (this is not to say that it achieves optimization). The speed at which pancapitalist vectors move demands instant response or else one is left gurgling in the backwater.* With efficiency comes discipline. The important point to remember here is that this type of discipline is grounded in voluntarism as opposed to a threat of violence. If problems over discipline arise, they tend to occur when different regimes of discipline meet in an action-based coalition (for example, the pro-violence-no violence contradiction). Happily, this problem has been recognized, and steps are being taken to reintroduce harmony into the ranks, or at the very least tolerance.

Resistant tactics share the interest in reactivity, but do so in a qualitative manner due to their relationship with specificity, immediacy, and at times intimacy. Consequently, tacticality is more fluid because it does not have to be focused on efficiency and optimization. It has a place for the nonrational; it has the luxury of seeing individuals as more than a force to be brought to a field of contestation. And finally, tactics can fail without necessarily leading to the demise of a front, movement, or campaign.

If this version of tacticality is accepted, a much clearer role is established for TM. It is the experimental wing of a(ny) given movement. For example, while the strategists decide how to construct and deploy a communication network, the tactical media practitioner (TMP) is working on the tools to optimize it. A given tool in this case can fail; the system itself cannot. The TMP in this model has a three-fold charge: to develop material, organizational, or conceptual tools of resistance that meet specific or generic needs; to perform micro-tests of the tools in the field; and if a tool is shown to be effective, to teach others who are interested how to use it, and assist them with deployment operations. Having made these distinctions, however, we should not fall into the same binary trap as the egoists and the collectivists. While there are clear differences that should not be ignored, these two vectors can and must work in harmony. This situation does not require that one be chosen or prioritized over the other. TMPs make the tools, and the strategists activate them on a mass scale. Every movement needs research and development if it is not to stagnate, or worse, become nonfunctional because no new tools have been designed and what they did have was reappropriated back into the system. Every movement also needs the strategic contributions territorial mapping(s), logistical organization, coalition/network construction, and communication systems.

Where then should individuals position themselves on this long continuum? That depends on a person's situation. Assuming that overwhelming majority reading this essay are not in a situation that forces them to maintain unrelenting, maximum resistance, CAE suggests the following. First, remember that we are all becoming many things all at once. We are both becoming strategists and becoming TMPs, so it's not an either/or choice on a personal level either. One can be writing software one day and helping to organize a demo the next. At the same time, there are always preferences involved. CAE, for example, due to its own egoistic leanings, tends to work independently of particular movements or campaigns. On the other hand, Gran Fury (graphic wing) and Testing the Limits (video communication wing) worked exclusively for ACT UP. Either way makes a significant contribution. Rather than "from each according to h/er ability," it would be better to say "from each according to h/er desire." Without desire, burn out is inevitable - an experience I am sure many readers here can give witness to. Long-term commitment to any voluntary movement requires self-satisfaction as well as social satisfaction. Pleasure and altruism do not have to be in contradiction with one another, but for this to happen, sacrifice must be eliminated from the formula.

ASKING QUESTIONS

Geert Lovink and Florian Schneider have recently reframed and revitalized Lenin's question of "What is to be done?" Accepting the idea that neoliberal globalization is a distinct set of flows that dramatically differs from those common to the nation-state, it would only follow that new strategies of resistance and new logistical considerations will be needed in order to battle this new power configuration. The operative word in the previous sentence is "strategies." A question is only useful if it is addressed to the appropriate source. The intelligence and knowledge resources of tacticality are going to have little to offer, much as egoists had little to offer concerning the social structure and dynamics of utopia. These statements are not a criticism, nor do they highlight a deficiency; CAE is only saying that tacticality does not think in such general terms. Its tendency is toward the concrete. One shouldn't ask a cabinetmaker how to build a house. A better question would be to ask about storage, and save the house-building question for an architect.

There is no doubt that when facing the trauma of neoliberalism, many an architect is needed. So many issues need to be identified and sorted. The problem of utopia returns once again. How can we design new strategies without some concept of what a nonimperial world will look like? How do we imagine globalization without empire? Negri and Hardt claim that one way to visualize it is as a place where the smooth space of the commodity is transformed into a smooth space for people, thus allowing them friction-free nomadic movement. That sounds reasonable; people will labor for that cause (in fact it has quite a long history). Now the strategists have to identify all the primary barriers and develop a general plan of action with timetables, logistical support structures, labor resources, etc. The tacticalists will provide the plans to knock down specific barriers in a particular situation.

What CAE is attempting here is to wash away the despair that comes from the thought that TM is deficient because it can't solely combat globalism: of course not, it is only a part of a larger system, but within that system it is quite useful. If we go back a couple of decades, this issue was framed along the lines of how can art change anything? Individual works of representation cannot do much, but flowing collective bodies of work can change the symbolic order (and sometimes for the better). Changing the symbolic order is not enough to completely transform a culture - the material order has to be reconstructed as well - but shifts in the symbolic realm are a necessary contribution to an overall agenda of change. TM functions in the same way. It is only a part of the system of resistance; it is not the system itself.

WHAT WOULD A TACTICAL MEDIA FESTIVAL LOOK LIKE?

Let us start with what the festival would not be. It would not be a place to pontificate and theorize on how to defeat neoliberalism or pancapitalism. This comment is not meant as a theory bash, nor as a call for the separation of theory and practice; it is only to say that with limited time and resources the immediate task at hand (tactics) should be given priority. The festival would also not be the location for organizing large strategic networks. Andreas Broeckmann has already spoken quite eloquently on a couple of different occasions on why the tactical should not bleed into the strategic, so we will leave it at that. With negatives said, a more positive plan may be suggested. The main tendency of such a meeting would flow toward mechanics. The question at a TM event is not what is to be done (that is an important question, but it should be posed in another context), but how

do we produce and under what conditions? How do we produce software, gizmos, robots, wetware, graphics, theater, video, radio, etc? How do we hack, pick locks, graffiti, build barricades, etc? The TM event could in part be thought of as a series of small workshops. The second element is to include demonstrations of how tools work in particular contexts. These presentations (intimate and individual as opposed to panels) would not just highlight successful uses of tools and skills, but failures as well. The final element would be on research models. Presentations on methodologies for skill and knowledge acquisition that are alternatives to school/university are essential.

With a more qualitatively oriented and intimate form of presentation perhaps we can capture the best element of festivals and conferences all over - the discussions that happen in the hallways, bars, and cafes. This always seems to be where the most useful information is exchanged. Formal presentations in large halls are antithetical to this type of informed, relaxed, convivial discussion. Further, these meetings should not be the spot to promote careers or reinforce the cultural star system, and the physical architecture and the social organization of the meeting should reflect that. The space should be arranged to foster dialogue and to do little more than that. If we take some time to make a couple of theoretical distinctions, and organize events around function, we should be able to remove the alt.everything tag that has attached itself to TM.

* This was one of the lessons learned from the first gulf war-full mobilization has to take place before the event to be resisted occurs. The peace movement is far better organized this time around due to learning this lesson.

PARASITIC MEDIA

Creating Invisible Slicing Parasites and Other Forms of Tactical Augmentation

By Nathan M Martin for The Carbon Defense League, September 2002

A parasite is defined as "an organism that grows, feeds, and is sheltered on or in a different organism while contributing nothing to the survival of its host." The tactics of appropriation have been co-opted. Illegal action has become advertisement. Protest has become cliché. Revolt has become passé. These disputes have reached the definition of rhetoric. They are the usual suspects. Having accepted these failures to some degree, we can now attempt to define a parasitic tactical response. We need a practice that allows invisible subversion. We need to feed and grow inside existing communication systems while contributing nothing to their survival; we need to become parasites. We need to create an anthem for the bottom feeders and leeches. We need to echo our voice through all the wires we can tap but cloak our identity in the world of non-evidence, and the hidden.

What I am indirectly referring to is operating as an appendage; creating a practice that hops the meta-train of media. In much radical behavior, we struggle, writhe, and scream, but make only a whisper. We must exercise the scream and stretch our vocal chords to make room for the growl. This bite must remain silent - a bite with no bark. The parasite's own existence depends on its ability to remain hidden. The parasite is the mystical computer glitch. The parasite is the bandwidth thief. The parasite is the invisible usurper. The shift that takes place in the host, if any, is one so gradual the parasite will be able to feed

and thrive without detection.

The invisibility of the parasite is only through the eyes of its host organism. A parasite may be very visible to other parasites or to those human users that utilize the exploits or extensions that may be created by the introduction of the parasite into the host. It is the host that either cannot detect the presence of the parasite, or who observes the parasite, but only as an anomaly that stays well within the systems margin of error. The parasite flies below the radar of the hosts policing system by remaining too peculiar, non-distinct or immeasurable. It is by appearing as an expected and accepted system bug that an otherwise visible parasite becomes invisible to its host. The way a parasite remains within the margin of error of a host system is to work within large expansive organisms that have less ability to control or monitor most of their own structure with any great detail. There is a blurring that will occur in systems where there is a large gap between manager and worker or between operating system and application.

If the standard deviation returned during any examination performed on a host organism is larger than it was before the introduction of the parasite into the host then the parasite will become visible to the host policing system and will be detected and removed. This would be a failure of a parasite in not knowing a hosts standard deviation tolerance. It is in larger systems that larger tolerances are given for error. In smaller systems, the monitoring is so direct that standard deviation is already so small that it becomes difficult to introduce a parasite into the host that will remain invisible and still be able to function properly. An example would be the amount of theft by employees that occur at a small business where the owner is a visible source of monitoring being much lower in most cases than a large corporation where the owner is not present and possibly not known. Retail thefts, like employee thefts, increase with the size of a business. Corporations such as Wal-Mart factor the losses they will see due to theft into their financial planning and cost analysis. Usually if the amount of theft grows relative to the size of the corporation, the level of standard deviation will not increase and no alarm will go off that will force the host to change its behavior. This may change with the introduction of surveillance technologies into these environments but that shift will eventually return to a patterned behavior with its own level of standard deviation. A parasite must respect the tolerances of its host. A host may grow but only relative to the growth of its host. The parasite must remain invisible to the host.

The practice of parasitic media I am defining is one that is not all together new. It is operation within a pre-defined communication system. It is a plug in - an extension. It is a universal connector. The specialty it contains is that of co-existence and adoption. Rather than operating from the response of destruction, annihilation, or the more eloquent appropriation; we will build ourselves as spy-ware and viruses. These are parasites with a new agenda. We will construct no new systems in exercising parasitic media practices; instead we will only build extensions to pre-existing systems. The ability to create these extensions invisibly relies on large system sizes. The systems become hosts for the parasites. The more complex the host system, the more possibility there is for a parasite to exist unnoticed - until the sickness sets in, and then it is too late. Larger communication systems are only one part of a vast array of media that can serve as hosts. With expansive global communication infrastructures, adding a new appendage that hides itself well becomes relatively simple. By understanding the surveillance practices within the systems we desire to build for, we can understand and define our limitations. While these limitations are sometimes clearly allocated and narrow, they still allow for much play. The ability for play is built into the allowances and tolerances within any sys-

tem. The margin of error for these systems, both digital and analog, is where parasitic media will operate.

In North America, the freighthopper emerged with the creation of the expansive railroad system as a hobo (usually working very sporadically as itinerant farm hands for small amounts of cash) who would sneak onto trains and ride in open boxcars to their destinations. The success of their ventures relied on remaining invisible. They cost the railroads no extra effort – other than the cost of hiring train yard cops, known as bulls, to police the freighthoppers. The freighthopper was known as a freeloader that traveled the rails as an invisible extension or appendage of the trains feeding off of the railways mobility. The freighthopper is the folk version of a form of parasitic media response. This is a concept for conceptual piggybacking. If we take an example host being an existing railway system, we can build parasitic attachments (in the case of freighthopping, this is the hobo) that simply create added functionality. We hop on the train and ride the rails as far as we need to go. We avoid the "bulls" of the communication system train yards at all costs. Here we can use a comparison between freighthopping and hitchhiking to understand the relationship between parasite media and other forms of tactical media that rely on awareness. The tactic of the latter can very effectively make use of mainstream advertising or communication machines to dispense whatever chosen form of manipulation, gesture, or subversion. In *The Freighthopper's Manual* by Daniel Leen (1) we are told that "the police are encountered less often on freights because freighthopping is essentially a private means of transportation, while hitchhiking is essentially public – you've got to stand out there on the side of the road in front of God and everybody." Parasitic media is the freighthopper that makes privacy essential. This privacy is the invisibility or the cloak that forms the definition of parasitic media response. Parasites are hobos that live off the rails of their hosts.

Parasitic response in media does not attempt to reassign function or modify primary usage. There is no threat to consumers of systems. Therefore these responses can fly under the radar of most monitoring systems. If nothing is disturbed, or at least knowledge of the disturbance is not transmitted, what you will have created is a backdoor or trapdoor to a system with your own set of predefined and augmented behaviors. The pattern of use for the system, whatever it might be, is not harmed or altered. This is critical to the concept of the parasite as activist. By adding functionality to a pre-existing system, you make use of only that which you create which in turn remains invisible. This means the parasite can then remain invisible; creating the semi-tangible notion of the ubiquitous backdoor.

It is possible to consider living parasites to be the most substantial group of activists in our world. Parasites make up the majority of species on Earth. Parasites can survive as animals, including flatworms, insects, and crustaceans, as well as protozoa, plants, fungi, viruses and bacteria. It is believed that parasites may now outnumber free-living species four to one. Parasites rule the earth and some believe have the ability to not only participate in evolution but also guide it invisibly. We can take our cue for social intervention from the action of the parasite.

Every ecosystem on Earth is just as rife with parasites that can exert extraordinary control over their hosts, riddling them with disease, castrating them, or transforming their natural behavior. Scientists... are only just beginning to discover exactly how powerful these hidden inhabitants can be, but their research is pointing to a remarkable possibility: Parasites may rule the world. The notion that tiny creatures we've largely taken for

granted are such a dominant force is immensely disturbing. Even after Copernicus took Earth out of the center of the universe and Darwin took humans out of the center of the living world, we still go through life pretending that we are exalted above other animals. Yet we know that we, too, are collections of cells that work together, kept harmonized by chemical signals. If an organism can control those signals - an organism like a parasite - then it can control us. And therein lies the peculiar and precise horror of parasites. (2)

Parasites have the ability to manipulate the behavior of their hosts. There are two hosts available to a parasite that wishes to jump species, the upstream host which is usually directly controlled by the parasite and operates as a sort of delivery method, and the downstream host which seemingly behaves normally. It is believed by some that the downstream host is also manipulated by the parasite and may form a unique relationship with a parasite that enables the process of food gathering. This can be seen in certain parasites that infect fish. The parasite temporarily controls the behavior of its host to produce a flailing surface swimming target for birds. The birds benefit from the easy target of fish and as predators are surprisingly willing to ingest the parasitized fish. The parasite does drain a small amount of energy from the bird but that is easily offset by the benefit they provide. The relationship develops slowly and awareness becomes unimportant.

One amazing example of parasitic control of host behavior can be seen in the lancet fluke, *Dicrocoelium dendriticum*. As an adult, the parasite lives in a cow's liver. The fluke's eggs are spread by the cow through their manure. Snails feed on the manure and swallow the fluke's eggs. The young flukes penetrate the wall of the snail's gut and emigrate to the digestive gland. In the gland, the fluke's produce more offspring which travel to the surface of the snail's body where they are dispensed of by the snail through balls of slime which are left behind in grass. Ants swallow the balls of slime in the grass which are containers for hundreds of immature lancet flukes. The parasites slide into the ant's gut before traveling around the rest of the body. Eventually they move towards the cluster of nerves that control the ant's mandibles. Most of the flukes then leave to return to the gut while a few remain behind in the ant's head. This is where some of the most amazing maneuvering occurs. As the evening approaches, infected ants do not return back to the colony with the other ants but instead climb to the top of surrounding grasses where they clench their mandibles on the blades and wait, motionless, until morning when they join back with the rest of the colony. These ants suffer from a period of temporary insanity where they are awaiting ingestion by a cow - which feed generally in the cool evenings. Once eaten by the cow, the cycle has been completed.

Might we be able to control media or our hosts in the same way as the fluke that drives the ant to temporary insanity? These parasites, that some consider to be the dominant forces in evolution and adaptation, are completing revolutions on a daily basis. They work with limited opportunity and utilize what might be seen as their disabilities, to not only control their host but also social behavior. If we can adapt this understanding to our own infiltration of media systems we could use the power and the relationships that already exist as our carriers. As subversives and workers, we could mutate our hosts through an invisible invasion.

In an article on horizontal gene transfer, Dr. Mae-Wan Ho examines a study conducted by researchers at Indiana University in 1998 that found a genetic parasite belonging to yeast that only recently was jumping into unrelated species of higher plants. "The parasite is a piece of DNA called a "group 1 intron" that can splice itself in and out of a partic-

ular gene in the genome of mitochondria."(3) When the intron injects itself into a genome, it is able to add an extra stretch of DNA that does not belong to the host. The genetic parasite must overcome genetic barriers in the host that maintain distinctions in species. This same process may be responsible for the rise of diseases resistant to drug and antibiotic treatment. The parasites are learning. Genetic engineering uses artificial genetic parasites that operate as gene carriers. The carriers perform a horizontal gene transfer between unrelated species. The artificial genetic parasites are constructed of parts from the most aggressive naturally occurring parasites of which the group 1 intron is a member. It is still unclear what has caused the genetic parasite to leap onto higher level plants only recently, it does make us aware that parasites have learned the skill of adaptability for survival - so must activists and artists.

In parasitic computing , CHECKSUM running over a TCP (transmission control protocol) connection between multiple nodes or machines on the Internet is used to force solutions to mathematical problems. All the tasks are performed invisibly over the connected web servers. This operation is similar to the work done by the SETI@home program. SETI uses the computational power of computers that download its software to search through immense amounts of radar data for intelligent extraterrestrial life. A program like SETI differs since its hosts are aware and volunteer to submit their resources to reach a common goal. While this is a useful tactic in some situations, it is not what we are developing with a parasitic response. A parasitic computational response would act without permission and would serve as a passive interaction of unawareness. In a natural environment, permission is not necessary. Parasites are criminals that violate the artificial construct of permission. Parasites rely on their ability to remain undetected or at least not worthy of concern. Don't ask, don't tell, and don't bother.

Here it is important to make a distinction between two types of parasitic media response; incident-based and generative. The first and most commonly practiced form is incident-based. Incident-based parasitic media response takes place in a very specific time and space. There is no need for the parasite to live longer than a few days or even a few seconds. The more complex system is generative parasitic media response. Generative parasites must adapt and grow with their host system. This growth creates an allowance for greater sustainability of backdoors or hijacks. A parasite need not take advantage of its host's vulnerability to hijack. It is in the best interest of the parasite to live and feed alongside its host. There might be other forms of parasitic response and media that will evolve with practice and discourse but for now it is critical to stress the separation of these two forms of behavior. The reason to create the separation is that while identifying both types of parasitic media responses, it is the generative or long-term parasite that provides us with a tactic that has yet to be fully explored. It is important to detail and understand examples of incident-based parasitic media responses, but it is the generative parasite that has yet to be used as a tactical media response. This is the genre of parasite that coexists with its host and functions best over a long-term relationship. Both host and generative parasite grow together. It is the invisible parasite that feeds slowly off its host or extends abilities to its host that become accessible to outside users. The parasite either operates as an undetected and slowly emerging cellular shift in the organism, or as a backdoor to a host that provides extended functionality through invisible means. It might also be possible for a parasite designed to be incident-based to slowly evolve into a generative organism. Alternately, a parasite designed to be generative could die too soon or miss a level of adaptation. It will have served some function up until its point of separation from the host even in the event of an untimely demise. It is likely that given the speed at which communication systems and media reorder themselves, many gener-

ative parasites will live fast and die young. It is the older media that might create better hosts for generative parasites. In using the term older media I am generically referring to anything from radio to electric companies to light bulbs to humans to insects to dirt to DNA. These may or may not fit all definitions of media, but they do have the possibility to become hosts for parasites.

Parasitic media does not need to occur within the realms of the electronic or computational; it can, and should exist at the cultural level as well. This model for tactical response can operate within all ranges of culture: the arts, the sciences, law and government. The criticality is to remain media unspecific and fluid. Each response, each parasite must understand its host prior to any form of invasion or invasive procedures. It is through an understanding of the operation of a host that a parasite can co-exist and adapt to its environment. The parasite does not attempt to change its host through destruction since its own survival is dependant on the existence of its host. It instead must learn to adapt to changes in the hosts structure. The structure can mean its cellular makeup, its organization, or its bureaucracy. This is where a unique value can be understood for parasitic attacks. Because of the nature of the parasite, primarily I am referring to the needed invisibility; responses can be slow to develop. The growth of the parasite does become an exponential one; or at least has the power to do so. With an augmentation, the device or system as host will continue to grow. A critical part of parasitic response is its need to interpret and react to environmental variable shifts that might occur. Parasites would benefit from being able to adapt to changes in their host entity.

We must begin to radicalize our definition now. We must take the mundane parasite and split it into an attack across all medias. We must seek out hosts wherever they might be breathing. We must define now the industries and areas where parasitical media might be used as a form of response. I shall propose several names for distinctions between the genres of parasitic media that might be created.

Slicing Parasites

Human Host Parasites

Soft Parasites

Hard Parasites

Memetic Parasites

Ideally these distinctions will blur themselves and new criteria will emerge. This exercise is used as a method for stimulating concrete thought of what a parasitic media response could actuate itself as. These are only sketches of deployment methodology. In any war, the weapons must but be chosen appropriately and creatively. The parasite becomes both consumer and producer.

Slicing Parasites might fall under the category of generative parasitic response. The name is derived from hacker folklore (and much that was actually effected) involving a process known as 'Salami Slicing'. This is a procedure where very small amounts of digital cash are 'sliced' thinly from computations performed on bank accounts over extended periods of time, and diverted into a unique, separate account. This process usually involves fractions of a penny that are discarded or lost during data rounding. In banking systems, 'Salami Slicing' is used to embezzle large amounts of virtual cash undetected and without harm to the consumers. This allows such parasites, when correctly executed and monitored, to go undetected for long periods of time, even years. It was the computer software that performed mathematical rounding operations that served as the initial

host - of course this host was fed by the larger system of the financial industry and virtual cash. This type of parasite can be traditionally referred to as a Trojan horse.

Here is one such account of a Salami-style Slicing Parasite that existed for a number of years.

A programmer working at a mail-order sales company had its computer round down odd cents in the company's sales-commission accounts and channel the round-downs into a dummy sales-commission account he had established under the name of Zwana. He had invented the name Zwana because he knew that the computer processed the company's accounts in alphabetical order, and he could easily program the computer to transfer all the round-downs into the last account in the computing sequence. The system worked perfectly for three years, and then it failed -- not because of a logical error on the culprit's part, but because the company, as a public-relations exercise, decided to single out the holders of the first and last sales-commission accounts on its alphabetical list for ceremonial treatment. Thus Zwana was unmasked, and his creator fired.(4)

Another example of Slicing Parasites occurs over networks. I earlier described distributed computing projects. One of the earliest examples of a worm that operates in such a manner was completed by researchers at the Xerox Parc Lab in Palo Alto, CA.(5) In 1982, the worm was created to find idle machines. It was used to distribute workloads and was not a malicious worm. The process involved probing through an ordered set of processors, asking if a system is idle. When a free processor is discovered, the worm takes the currently active segment of operation and copies it to the idle machine. The process then repeats and spreads in this manner. Distributed computing and cluster computing all operate off a principal of the worm or the parasite. It is the cloak of invisibility that defines such action as a parasitic response. This is the distinction in such practices between division of labor (distributed computing) and free work (worm) -- the use of pre-existing systems to bear the load.

While most examples we can find of Slicing Parasites occur in computer software, we need not limit its definition in such a way. It is only in stepping away from the historicity of 'Salami Slicing' techniques that we begin to see its application through other media. This is where the definitions we are trying to use to distinguish tactics and genres within parasitical media response begin to degenerate. One example of such a blur can be seen in a project completed at the MIT Media Lab. This excerpt is from the MIT researchers 1998 paper Parasitic Power Harvesting in Shoes.

As wearable electronic devices evolve and proliferate, there will be a growing need for more power delivery to distributed points around the human body. Today, batteries provide much of that storage and power delivery is via wires. The current approach to power distribution is clearly becoming problematic -- as more appliances are carried, we are forced to either use more small batteries that require replacement everywhere or run wires through our clothing to supply appliances from a central power source. Both are undesirable. A better solution is clearly to generate power where it is being used, bypassing the storage and distribution problem altogether. As power requirements drop for most wearable devices, it is no longer infeasible to harvest a useful amount of energy "parasitically" from a normal range of human activity... We believe that our approach has the potential to solve these problems for a class of wearable devices by placing both the generator and powered electronics in a location where considerable energy is easily available, namely the shoe.(6)

The researchers used the walking motion of the human host organism to capture inadvertent energy by attaching a parasitic device to a shoe. This project can be seen in one regard as a Slicing Parasite. Its unique power comes from thinly slicing small segments of power. It relies on large levels of repeated usage to create an allocation of the reciprocal energies produced in simply walking. A parasite such as this can also be seen as a Human Host Parasite or as a Hard Parasite.

A Hard Parasite is a response that relies on hardware modifications or electronic appendages. These are devices and parasites as attachments or augmentations to hardware. Alternately, Soft Parasites are those that live as extensions to code or software. They are digital and may produce a physical effect. Both are cannibalistic - hardware feeding off hardware or software feeding off software, respectively. With this definition of a Soft Parasite, we can see another blur with our example of a Slicing Parasite. The bank software rounding program does fall into our definition of a Soft Parasite. This blur between parasitic response genres is not only acceptable, but also desired, and usually impossible to avoid. Our divisions are not to serve as containers but templates and creative impetus for parasite development. A Human Host Parasite, of which the described MIT project might be an example, can live either inside or outside of a human host. The genetic version of the Human Host Parasite might be conceived as transgenic. A parasitical cellular change that might slowly factor into the growth of offspring or adaptation of ability or augmentation could be one practice.

An example of a Human Host Parasite variety, or more precisely a similar field of parasitical research that may lead to a Human Host Parasite can be found in Critical Art Ensemble's (CAE) 2002 essay *The Molecular Invasion*. This excerpt presents a concept of Fuzzy Biological Sabotage (FBS). The project being explained in this excerpt is designed to work off the existence of Roundup Ready (RR), an herbicide developed by the corporation Monsanto that genetically modifies the plants it attacks. In a way, both Monsanto's project and the work of CAE are forms of Human Host Parasites - or as we know from the process of horizontal gene transfer, have the opportunity, once ingested, to become such.

The best civil action that CAE has in development is a model to bond a colorigenic compound (dye) onto the RR enzyme. A colorigenic compound is one that has been synthesized so that it is initially colorless. Upon reaction, the compound is modified and releases a dye. Upon binding to the enzyme this compound could then release a dye, thus making all RR crops an undesirable color from the point of view of the consumer. If the dye can be developed, it would function as a contestational marker in the fields, and possibly in supermarkets and homes.⁽⁷⁾

This presents us with another case of blur between our definitions. The proposed project may end up being a Human Host Parasite, but initially it might fit better into the category of Slicing Parasite. Either will do for the purpose of our argument. I stated earlier that the work of Monsanto might also be considered a form of parasitic media. Monsanto's Roundup Ready mutagen does meet all of the criteria that we have set forth for a parasitic media. The value system we use to judge such actions must be developed. We have yet to develop a language for the parasite required to make an evaluation outside of the expected reactionary shiver. Until we can form a more precise definition for parasitic media that separates corporate usage from radical usage, we will have to leave Roundup Ready as another example of Human Host Parasitic media.

A Soft Parasite is a very open category and one of the easiest to find examples within. This can follow the methods and practices of many computer Trojan horses (1), viruses (1), rabbits (1), and worms (1). A more contemporary example of a Soft Parasite can be found in the works surrounding the development of 802.11b standards for wireless networks. One of the early terms used to describe the practice of sharing wireless nodes with traveling or community users was "parasitic grid." While this term has met with much criticism, it is a part of the actions history and useful for this argument in understanding system behavior. The "parasitic grid" has taken two forms. One involves simply placing wireless routers on a home user's roof-sharing the wealth. A more complex form involves "sniffing" out areas of wireless coverage. "Sniffing" out available wireless networks while moving around an area with a device such as a laptop is known as "wardriving." Here is a description of this process by the credited inventor of the term, Pete Shipley.

The 802.11 networking standard, also known as, "Wireless Ethernet", WiFi, and Wireless LAN has become very popular with Internet users and Corporations looking for a cost-effective LAN extension that is easy to implement and provides reliable service. The most popular implementation (as of April 2002) is 802.11b. The 2.4Ghz range, 11Mb speed wireless LAN variety. 802.11b encompasses all of the aforementioned characteristics, yet poorly implements one of the most fundamental aspects of networking, the security. What is the point of providing this type of service to your employees or even your family if you cannot guarantee that their communications are secure? At least with a wireless phone, someone cannot drive by your house and rack up your phone bill. This is exactly the problem with Wireless Ethernet. People can drive, walk or other wise approach the area that the wireless equipment can transmit in, and share your internet access or connect to your computer. This process is known as "wardriving", or "LAN jacking".

It is important to note that the 2.4Ghz range used by 802.11b networks is also used by many home cordless telephones as well as the X10 wireless CMOS camera transmitters and receivers. Operation on such a trafficked band requires respect for the tolerations of the host. It is important for the user's safety, depending on the nature of your business or behavior, to mask actions with short intervals of connectivity rather than extended usage. This action is primarily useful for incident-based parasitic media responses and not for generative parasites.

Similar to the development of the "wardriving" action is the development of "warchalking." "Warchalking" is loosely based on a system of written or graffitied signs or codes used by hobos during the depression. The universal language of signs was used to communicate to other hobos via chalked marks on the sidewalks, boxcars of freights and yards. The signs were encoded with useful information about the yards, safety, food or the cops. It was a parasitic system used for knowledge sharing. In "warchalking," LAN-jackers have developed a code of symbols chalked on streets in range of wireless networks or access points to indicate open nodes, closed nodes, and WEP nodes (Encrypted) in urban environments.

Knowledge dissemination of this kind demonstrates a Memetic Parasite, which is also a derivative or even a hybrid of a Human Host Parasite. The parasite infects the mind, replicates, and physically manifests itself within the urban geography. The host becomes a living codec for the encrypted semantics. Concurrently, this can be seen as a Slicing

Parasite. The Memetic Parasite will also fall under the more general heading of generative parasitic media response.

In his 1976 book, *The Selfish Gene* (8), Richard Dawkins defined memes as "...a (cognitive) information-structure able to replicate using human hosts and to influence their behavior to promote replication." Memes can commonly take the form of jokes, key phrases or even folklore. Memes can be transmitted orally in the sense of urban legends or written in the form of the popular WWII meme; "Kilroy Was Here." In an excerpt from *The Lifecycle of Memes* (9), by Henrik Bjarneskans, Bjarne Grønnevik and Anders Sandberg, we can see how the "Kilroy Was Here" meme was conceived and reproduced itself.

This meme originated during the Second World War, when wharf inspector James. J. Kilroy of Quincey, Massachusetts used the slogan "Kilroy was here" to mark products he had tested and approved. The marked products appeared on many battlefields, and the signature that seemed to appear just about everywhere caught the imagination of many soldiers, who began to copy it on just about any writable surface (Funk 1950). Most likely others were intrigued by the slogan that appeared in unlikely places, so they copied it further to spread the myth. While the meme spread well for several decades, it eventually went all but extinct in its active form.

A Memetic Parasite might take the form of a rumor or a play on a social network. By understanding the operation of language and oral communication, the brain can serve as an ideal host for a parasite. These parasites require long periods of time to grow and evolve; however, through a version of natural selection, they can offer an effective way of altering primary host behavior. Examples for this genre as a form of parasitic response are currently lacking. Creative tactical actions involving memes as parasites will emerge as the language of parasitic media continues to develop and experimentation edges forward.

Parasitic media response is a practice that may not need such definitions. It has existed forever and at the same time is an infant. Finding new tools and choosing our weapons appropriately is the charge of the tactical media activist. Our weapons in the case of the tactic of parasitic media response are non-traditional. They are hidden from the views of the public and of the institutions of academia and the arts and sciences. They must remain hidden – their development and survival depend upon it. Parasitic approaches to media manipulation or extension is an area that demands much further experimentation. These experiments need not be technical, as we can see with the Memetic Parasites. They can be as simple as vocalizing a concept or as difficult as creating transgenic organisms. These are all acceptable tactics for radical and parasitical behavior. We are in a period of tactical expression that is undergoing a transformation from an engineering model to a biological model, from logic to interpretation, from hard to soft. As this shift occurs, we are given an opportunity to reassert the aims of our practice while claiming the tactics of the parasite as our own media creation tool – a parasitic media.

In a time of renewed repression of political dissent, we must look to bacteria as our key to survival. Our fight is theirs. While radicals might appear to lack the capital or the voice afforded the ruling body, we are a critical appendage. We can invade our hosts as parasites. We can turn traitor and rise up in violent fashion with a gun held against the head of a genetic strand. We can mask ourselves as parasites. Invisibility is our savior. We can slay the beast from the inside out. The criticality is in remaining hidden when

inside the belly of the beast. The beast is not the host itself but the functionality of the host. The parasite can operate within the host to slowly create a cellular shift in the host's primary usage. It is through a long cancer-like growth that the parasite can slowly alter the construction of its host. The generative parasitic media response that I am defining may not affect many immediate results. The incident based parasitic media that creates additional functionality or added usage for a host may eventually build its adaptation into the base makeup of its host. Rather than rely on an immediate revolution, these tactics are a form of molecular revolution that takes much planning, skill, and patience. Their value will be determined with time. Like the mythical Jonah who was swallowed by a whale, we will tear our way out from the inside and survive longer than three days and three nights inside the belly of the host creature. This is the cry for a parasitic revolution.

I leave you with a quote from Dumont in the 1982 Disney techno-classic movie Tron. "All that is visible must grow beyond itself, and extend into the realm of the invisible."

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A VIRTUAL WORLD IS POSSIBLE: FROM TACTICAL MEDIA TO DIGITAL MULTITUDES

By Geert Lovink and Florian Schneider, October 2002

I.

We start with the current strategy debates of the so-called "anti-globalisation movement", the biggest emerging political force for decades. In Part II we will look into strategies of critical new media culture in the post-speculative phase after dotcommania. Four phases of the global movement are becoming visible, all of which have distinct political, artistic and aesthetic qualities.

1. THE 90S AND TACTICAL MEDIA ACTIVISM

The term 'tactical media' arose in the aftermath of the fall of the Berlin Wall as a renaissance of media activism, blending old school political work and artists' engagement with new technologies. The early nineties saw a growing awareness of gender issues, exponential growth of media industries and the increasing availability of cheap do-it-yourself equipment creating a new sense of self-awareness amongst activists, programmers, theorists, curators and artists. Media were no longer seen as merely tools for the Struggle, but experienced as virtual environments whose parameters were permanently 'under construction'. This was the golden age of tactical media, open to issues of aesthetics and experimentation with alternative forms of story telling. However, these liberating techno practices did not immediately translate into visible social movements. Rather, they symbolized the celebration of media freedom, in itself a great political goal. The media used – from video, CD-ROM, cassettes, zines and flyers to music styles such as rap and techno – varied widely, as did the content. A commonly shared feeling was that politically motivated activities, be they art or research or advocacy work, were no longer part of a politically correct ghetto and could intervene in 'pop culture' without necessarily having to compromise with the 'system.' With everything up for negotiation, new coalitions could be formed. The current movements worldwide cannot be understood outside of the diverse and often very personal for digital freedom of expression.

2. 99-01: THE PERIOD OF BIG MOBILIZATIONS

By the end of the nineties the post-modern 'time without movements' had come to pass. The organized discontent against neo-liberalism, global warming policies, labour exploitation and numerous other issues converged. Equipped with networks and arguments, backed up by decades of research, a hybrid movement – wrongly labelled by mainstream media as 'anti-globalisation' – gained momentum. One of the particular features of this movement lies in its apparent inability and unwillingness to answer the question that is typical of any kind of movement on the rise or any generation on the move: what's to be done? There was and there is no answer, no alternative – either strategic or tactical – to the existing world order, to the dominant mode of globalisation. And maybe this is the most important and liberating conclusion: there is no way back to the twentieth century, the protective nation state and the gruesome tragedies of the 'left.' It has been good to remember – but equally good to throw off – the past. The question 'what's to be done' should not be read as an attempt to re-introduce some form of Leninist principles. The issues of strategy, organization and democracy belong to all times. We neither want to bring back old policies through the backdoor, nor do we think that this urgent question can be dismissed by invoking crimes committed under the banner of Lenin, however justified such arguments are. When Slavoj Žižek looks in the mirror he may see Father Lenin, but that's not the case for everyone. It is possible to wake up from the nightmare of the past history of communism and (still) pose the question: what's to be done? Can a 'multitude' of interests and backgrounds ask that question, or is the only agenda that defined by the summit calendar of world leaders and the business elite?

Nevertheless, the movement has been growing rapidly. At first sight it appears to use a pretty boring and very traditional medium: the mass-mobilization of tens of thousands in the streets of Seattle, hundreds of thousands in the streets of Genoa. And yet, tactical media networks played an important role in its coming into being. From now on pluriformity of issues and identities was a given reality. Difference is here to stay and no longer

needs to legitimize itself against higher authorities such as the Party, the Union or the Media. Compared to previous decades this is its biggest gain. The 'multitudes' are not a dream or some theoretical construct but a reality.

If there is a strategy, it is not contradiction but complementary existence. Despite theoretical deliberations, there is no contradiction between the street and cyberspace. The one fuels the other. Protests against the WTO, neo-liberal EU policies, and party conventions are all staged in front of the gathered world press. Indymedia crops up as a parasite of the mainstream media. Instead of having to beg for attention, protests take place under the eyes of the world media during summits of politicians and business leaders, seeking direct confrontation. Alternatively, symbolic sites are chosen such as border regions (East-West Europe, USA-Mexico) or refugee detention centres (Frankfurt airport, the centralized Eurocop database in Strasbourg, the Woomera detention centre in the Australian desert). Rather than just objecting to it, the global entitlement of the movement adds to the ruling mode of globalisation a new layer of globalisation from below.

3. CONFUSION AND RESIGNATION AFTER 9-11

At first glance, the future of the movement is a confusing and irritating one. Old-leftist grand vistas, explaining US imperialism and its aggressive unilateralist foreign policy, provided by Chomsky, Pilger and other baby boomers are consumed with interest but no longer give the bigger picture. In a polycentric world conspiracy theories can only provide temporary comfort for the confused. No moralist condemnation of capitalism is necessary as facts and events speak for themselves. People are driven to the street by the situation, not by an analysis (neither ours nor the one from Hardt & Negri). The few remaining leftists can no longer provide the movement with an ideology, as it works perfectly without one. "We don't need your revolution." Even the social movements of the 70s and 80s, locked up in their NGO structures, have a hard time keeping up. New social formations are taking possession of the streets and media spaces, without feeling the need of representation by some higher authority, not even the heterogeneous committees gathering in Porto Alegre.

So far this movement has been bound in clearly defined time/space coordinates. It still takes months to mobilize multitudes and organize the logistics, from buses and planes, camping grounds and hostels, to independent media centres. This movement is anything but spontaneous (and does not even claim to be so). The people that travel hundreds or thousands of miles to attend protest rallies are driven by real concerns, not by some romantic notion of socialism. The worn-out question: "reform or revolution?" sounds more like blackmail to provoke the politically correct answer.

The contradiction between selfishness and altruism is also a false one. State-sponsored corporate globalisation affects everyone. International bodies such as the WTO, the Kyoto Agreement on global warming, or the privatisation of the energy sector are no longer abstract news items, dealt with by bureaucrats and (NGO) lobbyists. This political insight has been the major quantum leap of recent times. Is this then the Last International? No. There is no way back to the nation state, to traditional concepts of liberation, the logic of transgression and transcendence, exclusion and inclusion. Struggles are no longer projected onto a distant Other that begs for our moral support and money. We have finally arrived in the post-solidarity age. As a consequence, national liberation movements have been replaced by a new analysis of power, which is simultaneously incredibly abstract, symbolic and virtual, whilst terribly concrete, detailed and intimate.

4. PRESENT CHALLENGE: LIQUIDATE THE REGRESSIVE THIRD PERIOD OF MARGINAL MORAL PROTEST

Luckily September 11 has had no immediate impact on the movement. The choice between Bush and Bin Laden was irrelevant. Both agendas were rejected as devastating fundamentalisms. The all too obvious question: "whose terror is worse?" was carefully avoided as it leads away from the pressing emergencies of everyday life: the struggle for a living wage, decent public transport, health care, water, etc. As both social democracy and really existing socialism depended heavily on the nation state a return to the 20th century sounds as disastrous as all the catastrophes it produced. The concept of a digital multitude is fundamentally different and based entirely on openness. Over the last few years the creative struggles of the multitudes have produced outputs on many different layers: the dialectics of open sources, open borders, open knowledge. Yet the deep penetration of the concepts of openness and freedom into the principle of struggle is by no means a compromise to the cynical and greedy neo-liberal class. Progressive movements have always dealt with a radical democratisation of the rules of access, decision-making and the sharing of gained capacities. Usually it started from an illegal or illegitimate common ground. Within the bounds of the analogue world it led to all sorts of cooperatives and self-organized enterprises, whose specific notions of justice were based on efforts to circumvent the brutal regime of the market and on different ways of dealing with the scarcity of material resources.

We're not simply seeking proper equality on a digital level. We're in the midst of a process that constitutes the totality of a revolutionary being, as global as it is digital. We have to develop ways of reading the raw data of the movements and struggles and ways to make their experimental knowledge legible; to encode and decode the algorithms of its singularity, nonconformity and non-confoundability; to invent, refresh and update the narratives and images of a truly global connectivity; to open the source code of all the circulating knowledge and install a virtual world.

Bringing these efforts down to the level of production challenges new forms of subjectivity, which almost necessarily leads to the conclusion that everyone is an expert. The superflux of human resources and the brilliance of everyday experience get dramatically lost in the 'academification' of radical left theory. Rather the new ethical-aesthetic paradigm lives on in the pragmatic consciousness of affective labour, in the nerdish attitude of a digital working class, in the omnipresence of migrant struggles as well as many other border-crossing experiences, in deep notions of friendship within networked environments as well as the 'real' world.

II.

Let's now look at strategies for Internet art & activism. Critical new media culture faces a tough climate of budget cuts in the cultural sector and a growing hostility and indifference towards new media. But hasn't power shifted to cyberspace, as Critical Art Ensemble once claimed? Not so if we look at the countless street marches around the world.

The Seattle movement against corporate globalisation appears to have gained momentum - both on the street and online. But can we really speak of a synergy between street protests and online 'hacktivism'? No. But what they have in common is their (temporal) conceptual stage. Both real and virtual protests risk getting stuck at the level of a global 'demo design,' no longer grounded in actual topics and local situations. This means the movement never gets out of beta. At first glance, reconciling the virtual and the real

seems to be an attractive rhetorical act. Radical pragmatists have often emphasized the embodiment of online networks in real-life society, dispensing with the real/virtual contradiction. Net activism, like the Internet itself, is always hybrid, a blend of old and new, haunted by geography, gender, race and other political factors. There is no pure disembodied zone of global communication, as the 90s cyber-mythology claimed.

Equations such as street plus cyberspace, art meets science, and 'techno-culture' are all interesting interdisciplinary approaches but are proving to have little effect beyond the symbolic level of dialogue and discourse. The fact is that established disciplines are in a defensive mode. The 'new' movements and media are not yet mature enough to question and challenge the powers that be. In a conservative climate, the claim to 'embody the future' becomes a weak and empty gesture.

On the other hand, the call of many artists and activists to return to "real life" does not provide us with a solution to how alternative new media models can be raised to the level of mass (pop) culture. Yes, street demonstrations raise solidarity levels and lift us up from the daily solitude of one-way media interfaces. Despite September 11 and its right-wing political fallout, social movements worldwide are gaining importance and visibility. We should, however, ask the question "what comes after the demo version" of both new media and the movements?

This isn't the heady 60s. The negative, pure and modernist level of the "conceptual" has hit the hard wall of demo design as Peter Lunenfeld described it in his book 'Snap to Grid'. The question becomes: how to jump beyond the prototype? What comes after the siege of yet another summit of CEOs and their politicians? How long can a movement grow and stay 'virtual'? Or in IT terms, what comes after demo design, after the countless PowerPoint presentations, broadband trials and Flash animations? Will Linux ever break out of the geek ghetto? The feel-good factor of the open, ever growing crowd (Elias Canetti) will wear out; demo fatigue will set in. We could ask: does your Utopia version have a use-by date?

Rather than making up yet another concept it is time to ask the question of how software, interfaces and alternative standards can be installed in society. Ideas may take the shape of a virus, but society can hit back with even more successful immunization programs: appropriation, repression and neglect. We face a scalability crisis. Most movements and initiatives find themselves in a trap. The strategy of becoming "minor" (Guattari) is no longer a positive choice but the default option. Designing a successful cultural virus and getting millions of hits on your weblog will not bring you beyond the level of a short-lived 'spectacle'. Culture jammers are no longer outlaws but should be seen as experts in guerrilla communication. Today's movements are in danger of getting stuck in self-satisfying protest mode. With access to the political process effectively blocked, further mediation seems the only available option. However, gaining more and more "brand value" in terms of global awareness may turn out to be like overvalued stocks: it might pay off, it might turn out to be worthless. The pride of "We have always told you so" is boosting the morale of minority multitudes, but at the same time it delegates legitimate fights to the level of official "Truth and Reconciliation Commissions" (often parliamentary or Congressional), after the damage is done.

Instead of arguing for "reconciliation" between the real and virtual we call here for a rigorous synthesis of social movements technology. Instead of taking the "the future is now" position derived from cyber-punk, a lot could be gained from a radical re-assessment of the techno revolutions of the last 10-15 years. For instance, if artists and activists can learn anything from the rise and subsequent fall of dot-com, it might be the importance of marketing. The eyeballs of the dot-com attention economy proved worthless.

This is a terrain of truly taboo knowledge. Dot-coms invested their entire venture capi-

tal in (old media) advertisement. Their belief that media-generated attention would automatically draw users in and turn them into customers was unfounded. The same could be said of activist sites. Information "forms" us. But new consciousness results less and less in measurable action. Activists are only starting to understand the impact of this paradigm. What if information merely circles around in its own parallel world? What's to be done if the street demonstration becomes part of the Spectacle?

The increasing tensions and polarizations described here force us to question the limits of new media discourse. In the age of real-time global events Ezra Pound's definition of art as the antenna of the human race shows its passive, responsive nature. Art no longer initiates. One can be happy if it responds to contemporary conflicts at all and the new media arts sector is no exception. New media arts must be reconciled with its condition as a special effect of the hard and software developed years ago.

Critical new media practices have been slow to respond to both the rise and fall of dot-commania. In the speculative heydays of new media culture (the early-mid 90s, before the rise of the World Wide Web), theorists and artists jumped eagerly on not yet existing and inaccessible technologies such as virtual reality. Cyberspace generated a rich collection of mythologies; issues of embodiment and identity were fiercely debated. Only five years later, while Internet stocks were going through the roof, little was left of the initial excitement in intellectual and artistic circles. Experimental techno culture missed out on the funny money. Recently there has been a steady stagnation of new media cultures, both in terms of concepts and funding. With millions of new users flocking onto the Net, the arts can no longer keep up and withdraw into their own little world of festivals, mailing lists and workshops.

Whereas new media arts institutions, begging for goodwill, still portray artists as working at the forefront of technological developments, the reality is a different one. Multi-disciplinary goodwill is at an all time low. At best, the artist's new media products are 'demo design' as described by Lunenfeld. Often it does not even reach that level. New media arts, as defined by its few institutions rarely reach audiences outside of its own electronic arts subculture. The heroic fight for the establishment of a self-referential 'new media arts system' through a frantic differentiation of works, concepts and traditions, might be called a dead-end street. The acceptance of new media by leading museums and collectors will simply not happen. Why wait a few decades anyway? Why exhibit net art in white cubes? The majority of the new media organizations such as ZKM, the Ars Electronica Centre, ISEA, ICC or ACMI are hopeless in their techno innocence, being neither critical nor radically utopian in their approach. Hence, the new media arts sector, despite its steady growth, is getting increasingly isolated, incapable of addressing the issues of today's globalised world, dominated by (the war against) terror. Let's face it, technology is no longer 'new,' the markets are down and out and no one wants know about it anymore. Its little wonder the contemporary (visual) arts world is continuing its decade-old boycott of (interactive) new media works in galleries, biennales and shows like Documenta XI.

A critical reassessment of the role of arts and culture within today's network society seems necessary. Let's go beyond the 'tactical' intentions of the players involved. The artist-engineer, tinkering on alternative human-machine interfaces, social software or digital aesthetics has effectively been operating in a self-imposed vacuum. Science and business have successfully ignored the creative community. Worse still, artists have been actively sidelined in the name of 'usability', pushed by a backlash movement against web design led by the IT-guru Jakob Nielsen. The revolt against usability is about to happen. Lawrence Lessig argues that Internet innovation is in danger. The younger generation is turning its back on new media arts questions and if involved at all, operate as anti-corporate activists. After the dot-com crash the Internet has rapidly lost its imaginative

attraction. File swapping and cell phones can only temporarily fill up the vacuum; the once so glamorous gadgets are becoming part of everyday life. This long-term tendency, now accelerating, seriously undermines future claims of new media. Another issue concerns generations. With video and expensive interactive installations being the domain of the '68 baby boomers, the generation of '89 has embraced the free Internet. But the Net turned out to be a trap for them. Whereas assets, positions and power remain in the hands of the ageing baby boomers, the gamble on the rise of new media did not pay off. After venture capital has melted away, there is still no sustainable revenue system in place for the Internet. The slow working educational bureaucracies have not yet grasped the new media malaise. Universities are still in the process of establishing new media departments. But that will come to a halt at some point. The fifty-something tenured chairs and vice-chancellors must feel good about their persistent sabotage. What's so new about new media anyway? Technology was hype after all, promoted by the criminals of Enron and WorldCom. It is sufficient for students to do a bit of email and web surfing, safeguarded within a filtered, controlled intranet. In the face of this rising techno-cynicism we urgently need to analyse the ideology of the greedy 90s and its techno-libertarianism. If we don't disassociate new media quickly from the previous decade, the isolation of the new media sector will sooner or later result in its death. Let's transform the new media buzz into something more interesting altogether - before others do it for us.

VECTORAL EMPIRES

By McKenzie Wark, March 2003

01. These are precarious times. These are eventful times. Let us note some of the symptoms of this instability. There is September 11, and the prospect of a new form of American empire that uses September 11 as its pretext. There is the global stock market slide, triggered by the collapse of American tech stocks, which altered the lives of chip-makers in Korea and Coltan miners in the Congo. These are instances of what I call weird global media events. They are events because they are singular. They are media events because they happen in a vectoral space of communication. They are global media events because they call a world into being. They are weird global media events because they defy explanation. They subsume every explanation as mere ripples and eddies in their wake.

02. The weird global media event always begins in the middle. Something happens for which there is no readymade story instantly to hand. If only for a few moments, news media has to present the troubling images while it casts about for a story, inventing a beginning and positing an end. In the weird global media event what happens is always contrary to expectation. A new narrative trajectory has to be created to accommodate its singularity, after it happens. But in the moment when it happens, the weird global media event announces the presence of an unstable, ineffable world -- a world immune to interpretation. For an instant, we gape and gasp, confronted with the inexplicable.

03. How are we to avoid being stupefied by an event? Or worse, merely contributing a smart soundbite to it, enhancing it and extending it? By being prepared, when the event happens, not to look at the lightning strike of images, nor to just wait for the thunderclap

of explanation. Rather, one looks toward the horizon of the event, to see what it illuminates. In the moment of the event, one can see the shape of the virtual geography that makes the event possible. One can glimpse the network of military, business and communication vectors that create the event space within which any and every event now unfolds. One searches for the narrative horizon abstract enough that explains not just a particular weird global media event, but also the abstract space within which any such event is possible.

04. I only have to say "September 11", and we all have before us the memory of an event that flashed as lightning in the dark, illuminating the space of the vector. There were the vectors of the planes, guided by global positioning satellites. There were the vectors of news information, spreading their own debris around the world. Of course, the range of things that "September 11" might signify is itself a cloud of dust, settling differently in one memory to the next, but designating a dispersal of differences, created out of nothing, instantaneously.

05. What the vector communicates is unknowable, a cloud of dust. What it is that communicates is knowable, but only in the abstract. We cannot know what lies behind the images and stories - the pictures of Osama and Bush, or of Enron and WorldCom executives. We cannot know the economy that fascinates those bizarre business news channels, with their scrolling stock quotes, and their experts who narrate the current events seamlessly - provided you don't check up on their predictions. But we can know the nature of a world in which such events are possible.

06. This is the world of the vector. Or more precisely, it is the world of the splitting of the vector into two different speeds. Paradoxically, the revolution of speed, which is the revolution of the vector, is a slow moving one. The crucial moment of transformation was the development of the telegraph. Since the telegraph, information has moved faster than bodies, faster than commodities, faster than warheads. The Internet is really just a refinement of the telegraph. Since the telegraph, the vector of information, with its superior speed, creates a geography within which to organize the geography of people and things. This virtual geography is a space within which all the possibilities for the organization of other spaces come together. It is where objects are brought together with subjects, and where the categories of object and subject exist as real, yet abstract entities.

07. The virtual geography of the communication vector emerges as the promise of a space where the contradictions of second nature can be resolved. By second nature I mean the space of the material transformation of nature by collective labor. Second nature is a space of fragmentation, alienation, class struggle. In many ways, the space of the vector really is a third nature, from which the second nature of our built environments can be managed and organized, as a standing reserve, just as second nature treats nature as its standing reserve. However, this third nature does not emerge as a rational and transparent space, with a homogenous and continuous time. It emerges as a chaotic space, an event space. To the chaos of nature history responded by building a second nature, in which to dwell. To the chaos of second nature, history responded with a third nature, which in turn is producing yet more chaos. The angel of history, propelled by the blast of these two historical phases, can no longer look back at a point of origin, for the trajectory is clouded by the dust of its own information.

08. The weird global media event throws the space of its own possibility into relief, revealing it. In the light of the stock market crash, one sees a space in which power oper-

ates by traversing territories, marking and valuing them, assigning every object a value and a locus, calculating the potential of any and every interaction, commanding the movements of objects, timing their interactions, and evaluating the results. The vector of communication makes of everything it touches a resource for displacement and transformation. In the light of September 11, one sees a space in which power operates by gathering intelligence, by intervening in territories, breaching their integrity.

09. Power is in both cases vectoral. When called upon by the vector, there are two games every object thus identified may be called upon to play. One is the game of the commodity. In this third nature, everything is proximate to everything else, thus multiplying exponentially the possible combinations. The other game is that of strategy. Here proximity is still relative. What matters is the locus of an object relative to the border that encloses it. On the one hand, the vector makes every object property and all property proximate in an emergent space of the world market. On the other, the vector aggregates objects as territories in the emerging space of the world battlefield.

10. There is a tension between these two dimensions of third nature. The vector does not just develop third nature as a commodity-space. It develops and extends third nature as a strategy-space at the same time. Third nature is a plane upon which both kinds of power develop and both become more concentrated. The vector heightens the significance of both the flows that cross boundaries and the boundaries themselves. The vector undermines state sovereignty and at the same time enhances it. What makes this era so unstable is not just these two phenomena acting alone, but also the conflicts and collisions between them.

11. The United States has been through a period under Clinton in which the vectors of commodity-space dominated; and is now passing through a period under Bush Jr in which the vectors of strategy-space dominate. Both phases are developments of the same vectoral forces. In both cases, power resides more and more in control of the communication vector. The conflict between these two developments is less important than the fact that they stem from the same history - the emergence and enrichment of a third nature, through which not just nature but second nature appear as standing reserves, as objects cut from the scene. To the vector the spoils.

12. In the United States, the ruling class may no longer even be described as exclusively capitalist. It is becoming vectoralist. The power of the vectoralist class resides in the command of information as intellectual property - in its portfolios of brands and patents. The vectoral class controls the designs and images for objects that are to be produced elsewhere, by mere subcontractors. It controls the research and development from which new intellectual property arises. It controls the vectors of command and promotion by which production and consumption are regulated. This vectoralist class was a major backer of Clinton, and got much of what it wanted from his administration, from a liberal trade agenda to strict new intellectual property laws and the deregulation of media and communication industries. The collapse of the tech stock bubble may have weeded out the more speculative aspects of the vectoral industries, but if anything has merely concentrated power among the vectoralist class.

13. The vectoral class has another faction; less interested in a liberal trade agenda, more dependent on a statist economy of military procurement. The mass-produced armed forces of the capitalist era give way to the information war of the vectoralist era. This is the so-called Revolution in Military Affairs, which the Bush Jr administration is struggling

to impose on the Pentagon. The strategy of overwhelming force becomes information war - no less deadly, but more reliant on surveillance, remote controlled weapon systems, intelligence management. The assassination of an alleged Al Queda operative in Yemen by rockets launched from a remote controlled drone is a mere foretaste of the emerging vectoral war.

14. The liberal wing of the vectoralist class uses the vector to command the resources of second nature. Anything that can be objectified, classified, brought into potential relation with other objects, is what it seizes through its control of the vector. The statist wing, on the other hand, uses the vector to command the resources of nature. Anything that be treated as a resource, but which must remain territorially specific, is what is seizes through its control of the vector. While it appears that the interests of the energy industry dominate Bush Jr's administration, this is no less a vectoral interest. It is just that what the vector identifies as a resource is one of the few things that are spatially fixed. One can transport a tanker of oil, but not an oil deposit, which remains in place, subject to strategic calculation in the aggregate, rather than commercial calculation in the particular.

15. What confronts the world now is a dual empire, not a unitary empire. The military-industrial complex of the cold war era has been replaced, not by a juridical empire of global law and trade, but by a new duality, a military-entertainment complex. The two aspects of this empire, its commodity-space and strategy-space, overlap and contradict one another. Both are driven by the same imperative - the vectoralization of the world. The vector is what produces the world as such, as a space of property and strategy, a plane upon which things are identified, evaluated, commanded. Both empires emanate from the United States, but are not identical to it. They are, if anything, what are tearing the United States apart. The stress of this dual empire upon the fabric of American democracy and society is what prevents it from becoming, if you will, a 'normal' state.

16. The 'collateral damage' from the tension between these two empires includes both its notional friends and its enemies. The dual empire forces Europe into a Union that can both manage and contain its own vectoralization. The dual empire creates for itself the perfect double, the perfect enemy. Al Queda are a perfect and necessary enemy, in that it stands for opposition to both factions of vectoral power, both dimensions of empire simultaneously. It has attacked symbols of both aspects of the dual empire: the Pentagon and the World Trade Center.

17. These are precarious times, eventful times - not least for the forces that would oppose both the dual empire and its violent adversaries. Before September 11, it seemed to some as if the empire was a juridical one, to be confronted by a movement that addressed its highest councils of global coordination, such as the World Trade Organization. After September 11, some argue that one confronts the old American imperial regime, ever willing to shed blood for oil. Neither diagnosis is correct. The becoming-vectoral of power was never just a matter of the globalization of trade and its consequences. Nor is it the case that there is a simple continuum between the imperial military adventures of the past and the emerging strategy-space.

18. The purpose of this diagnosis is tactical, as an orientation for autonomous thought and action. These are not times in which, in Vaclav Havel's words, one can 'speak truth to power'. Power has no necessary relation to truth, only to communication, which has no necessary relation to truth whatsoever. All that matters to vectoral power is the value and location of objects. All that concerns it about those objects is the logistics of extracting

value or neutralizing threats.

19. One cannot confront a vectoral power by renouncing the use of the vector. There is nothing outside the vector. Rather, it is a question of using the vector otherwise. It is a question of using the vector as a trajectory for the creation of an open plane upon which difference is possible on its own terms, rather than as an equivalence based in calculations of strategy or property. The space of the event need not be equivalent to the space of the disaster. It is not necessarily a question of confronting the dual empire, so much as of escaping it. It is not a question of resisting an imminent apocalypse in the name of nostalgia for a pre-vectoral past, so much as of constructing a present that escapes the logic of a destructive history.

20. In the various practices of the tactical media movement are the seeds of another becoming. In the space of the dual empire, things have their qualities only as an adjunct to their quantities, their values and their dispositions. In tactical media, regimes of property and territory are bypassed, constructing the vector as the line along which a free creativity might flourish, one that is indifferent to authorship, ownership, territory and otherness.

21. If all this is abstract, elusive, it is only to prevent any readymade interpretation. "Never interpret, always invent", as Deleuze says. Invention is not, however, just a matter of concepts, percepts and affects. It is a matter also of the vector, of the space of their emergence, mingling and transformation. The space of invention has yet to be invented. A material practice of communication is called for, that renounces not only the metaphysics of truth and representation, but also the concretized game theories of the commodity-space and the strategy-space. What escapes the dual empire is the possibility of a material practice of communicating otherwise, as an expression of multiplicity, without the logic of identity that characterizes exchange, and without the logic of the other which characterizes strategy.

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A RIFT IN EMPIRE?

The Multitudes in the Face of War

By Brian Holmes, August 2003

The antiwar demonstrations of February 15, 2003 proved it: the self-organization of free singularities is possible on a planetary scale. And that was an event, despite all that followed. In a manifesto-text written just after those demonstrations, I used the language of Negri and Hardt to say that the multitudes could create a rift in Empire. In a context where the Aristocracy (the great transnational companies) had been weakened by a string of financial disasters, where the Monarchy (the political and military command of the earth) had fallen apart in serious dissension, I wanted to encourage the democratic action of the Plebe, against the scorn of the American, British, Spanish and Italian leaders. It was a moment that had multiplied the world's political stages, overflowing the traditional mechanisms of representation.

This overflow of the multitudes had the surprising character of any real event. Yet it wasn't unexpected. We had just crossed another threshold in the constitution of the networked resistance that became visible with the movements against neoliberal globalization. And now everyone can see how many other thresholds remain. After the war in Iraq, I still think the multitudes can produce a rift in Empire. But that rift must be produced, in Europe and throughout the world. How to seize the opportunity of refusal that revealed itself during the war? How to go much further? Here I'll look into the meaning of these words, multitudes, rift and Empire - in hopes that some work with words might help to prolong the movements against war.

The multitude is a figure of political philosophy. But it is inseparable from the actual pathways of the multitudes, as a set of singularities that comes into being through productive activity. What's new is the intersection of thinking and production. Labor - the simple activity of earning a living - is no longer an object of politics, but its departure point, its language or its very principle.

It is known that contemporary labor involves linguistic creativity, the expression of affects, spontaneous cooperation. These are the sources of innovation, indispensable for cognitive capitalism. But no boss can command creativity, expressivity, cooperation - these things cannot be submitted to any disciplinary regime. On the contrary, a certain kind of insubordination must be actively encouraged, in the very interest of productivity. And the possibilities of cooperation must be extended, so that everyone can cross the geographic, cultural and economic distances that separate the participants in a contemporary work group. Modern managerial technique consists in establishing a flexible framework for productive relations. Clearly, the paradigmatic framework for contemporary labor is the Internet. The advantage of such networked systems, for contemporary managers, is to isolate the individuals they link. Yet the ties of optical fibre are real, like the cooperation they encourage. And the establishment of this productive framework took networkers by surprise, because it allowed so much freedom. Now we see that this freedom is always associated with highly personalized control of the employees, via advanced techniques of surveillance. Everything that happens in the productive framework will also be surveilled, and the ideas, expressions and collective behaviors that prove harmful to the business will be repressed.

Between insubordination and surveillance, creativity and control, you have one of the internal contradictions of the new production regime. The fact that it puts thought to work guarantees the extension of the contradiction beyond the limits of salaried activity. As André Gorz writes in his recent book, "L'immatériel": "The more work calls on talent, virtuosity, the production of the self... the more these capabilities tend to overflow their limited application to any determinant task." Therefore the worker "will locate his dignity in the free exercise of his capacities, outside of the working context: journalists writing books, ad designers creating artworks, computer programmers demonstrating their virtuosity as hackers and developers of free software, etc." One might feel tempted to laugh at this image of "ad designers creating artworks."

The results have been mixed, to say the least. We have seen an outpouring of collective narcissism, a facile idealization of expressivity and interactivity - particularly in the magazine-gallery-museum world, where "ad designers creating artworks" had their day in the sun, throughout the 1990s. But something seems to have changed since then.

The immaterial laborer who thinks, speaks and creates on the job, then finally leaves that job behind to practice a form of creative expression, very soon feels the fragility of her position. Nothing permits her to survive while doing what she had nonetheless been consistently encouraged to do. Reflecting on her own predicament, she can meet all kinds of people: similar individuals marginalized by the effects of the same contradiction, then many others who have never been fully integrated into the productive system. By making the comparison between one's own situation and those of others, one attains a broader understanding of contemporary social relations, with their hierarchies of inclusion/exclusion extending across the earth. A personal experience of marginality, of precarious labor conditions, can encourage all kinds of solidarities, near or far. This moment of politicization implies at least a partial exit from the productive framework imposed by capitalist management. What then becomes interesting is to continue putting thinking to work. With this difference, that the work has become autonomous: it consists in weaving alternative networks, in view of solidarities and dissenting expressions.

It is at this point that the concept of the multitude can become doubly useful for the multitudes: as an ontological concept, and a concept of class. As an ontological concept, the multitude indicates a plane of immanence where human singularities discover their fragile potential - that is, the possibility of developing their own individuation through cooperation with others. But as a class concept, the multitude points to everything that stands in the way of this development. That obstacle is Empire: i.e. the sum total of control techniques forged by the corporations and states. These control techniques come to bear on our flesh as biopower: the capacity to manage, channel and parasitically exploit the creative power of cooperating singularities. Today, biopower increasingly takes on the explicitly repressive forms of surveillance and the police. Not only will workers be surveilled on the job; but also the entire population will be surveilled, while moving through the open systems of transport, exchange and communication. And surveillance is necessarily followed by the police. For the multitudes of the movements against capitalist globalization, Imperial power has taken on the perfectly standardized face of the "robocops" who carried out the repression in Seattle, Nice, Gothenborg, Genoa, etc. But through the visor of the robocop, what we see - in addition to their eyes - is an organizational mutation that gives rise to the Imperial state.

Here I refer to the book by Rob Jessop, "The Future of the Capitalist State." Jessop analyzes the paradigmatic shift from a Keynesian national welfare state, to a postnational Schumpeterian workfare state. What do these words mean? The contemporary state no longer cares about the "effective demand" of the workers, nor about any kind of

Keynesian social insurance; its preoccupation is with encouraging entrepreneurial innovation, which for Schumpeter was a major source of surplus value. But this kind of innovation, necessary for competition, is done by a fairly small part of the population, marked by a strong tendency toward exit. They tend to leave the constraints of the productive system. As soon as people quit working, the state's problem is no longer that of their welfare; on the contrary, they must be pushed back into the most servile and exploited positions, by way of the coercive programs that Tony Blair calls workfare. The state takes on the role of a collective manager for the flexible labor force - an imperative role under the transnational regime of networked competition. Thus it becomes postnational, adapting to the extended frameworks of capitalist productivity. Yet like the economy it serves, this Imperial form of the state is not stable, or even viable. It is shot through with grotesque contradictions, whereby technical and organizational innovation, the new mainspring of capitalist competition, leads to the political rationality of unlimited war.

Here, to my mind, lies one of the greatest ironies of the current period. The multitudes, as Toni Negri has never ceased to explain, are incommensurable: their immaterial expressions and cooperative innovations are irreducible to the measure of labor time, and therefore to the hourly wage. This disproportion of the multitudes can be understood from several different angles. On the one hand, it translates the enormous creative potential of scientific knowledge, particularly as it accumulates in the form of technology: and how shall we evaluate the "productivity" of the finger that activates a machine? On the other hand, it brings the indeterminacy of aesthetic experience into play at the very heart of social relations: and how shall we judge the "value" of different expressions? Thus work is uncoupled from wages, and tends to become autonomous. But throughout the 1990s, this uncoupling, this absence of any viable measure, acted in favor of financial speculation, encouraging the most exaggerated valuations of certain sectors, notably where high technology is the vehicle of human expression. The irony lies here. The krach of the new economy in spring 2000 was followed by a general slowdown throughout the world, putting an end to the "roaring nineties." Shortly thereafter, in the face both of an inevitable recession and intense criticism over the conditions of his election, G.W. Bush took the September 11 terrorism and the state of exception it justifies as the ideal means to consolidate his shaky presidency - and more broadly, to realize the disciplinary vision of the American neoconservatives. For them it is war, and no doubt war alone, that allows the state to impose its discipline on an autonomous labor force, after it has been mobilized and deceived by the untenable promises of a contradictory production regime.

So we come to the question: What is to be done? As soon as the US took the warpath toward the Iraqis and their oil, the multitudes reacted, overflowing all the bounds of political consensus, and infiltrating all the networks. In Europe the mobilizations were particularly strong: because people remember the 1930s, and they recognize the state of exception, the attempt to impose a new discipline. Great Britain saw the largest demonstration of its history; Italy and Spain were shaken by repeated mobilizations and direct actions; and France, Germany and Belgium translated public opinion into political opposition, within the arenas of the UN, NATO and the European Union. These dissensions at the heart of the political and military command are new: they mark a first step, a fragile chance to be seized. But can one really speak of a rift in Empire?

First, look at the reality: since the early 1990s, the European Union has increasingly become a distorted mirror of the United States. That is to say, a regional free-trade bloc built up according to the rules of Imperial competition. This neoliberal turn may be cloaked in social charters, but at this point, they count for very little. With each bout of

European chauvinism, whatever its pacifist or anti-American overtones, there appears to be a risk that under its cover, countries like France, Germany and Belgium will form a falsely social-democratic center, constructed around a core of protected industries, armament above all - while living in reality off the exploitation of peripheries, internal or external.

The danger is that the political class will use familiar hegemonic formulas to reinstate the existing hierarchies of inclusion/exclusion, but on a continental scale. These hierarchies, forged according to the old Fordist model, are protected at gunpoint today. And so France, Germany, Belgium and Luxembourg held meetings on April 29, 2003, to speak about founding a common military force. In the newspaper *Le Monde* of that same day, a text appeared under the title: "European Defense: Time to Take Action!" The authors were four CEOs from the European defense lobby - our familiar representatives.

Life is elsewhere. The politics of the multitudes consists in opposing the techniques of control, in escaping them - but in such a way that the production of this exodus is itself linguistic, cooperative, affective. What's interesting in the networked demonstrations is exactly that: what André Gorz called the "free exercise" of each one's creative faculties. But this self-organization is just a foretaste of deeper resistance. A real rift in Empire will require a transformation of the specific forms of redistribution and coercion put into operation by the state, and the creation of more viable frameworks for productive existence. We must dissolve the Schumpeterian postnational workfare state, which upholds unlimited competition and war. And that means carrying out political struggles on the measured ground of representative democracy, without forgetting that the power of the multitudes overflows all the borders. The challenge of the 21st century, in Europe and elsewhere, is to construct social infrastructure that can sustain the incommensurable - outside any technique of capture and control.

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FUZZY BIOLOGICAL SABOTAGE

By Critical Art Ensemble, 2003

If the left has learned anything from resistance against capital driven technocracy, it is that the democratic process is only minimally useful for slowing the profit machine of pancapitalism. Since corporations and other capital-saturated institutions own the process, and tend to function outside national democratic imperatives, other methods of power appropriation have to be developed. In the case of biotechnology, the resistance is unfortunately in a position of reactivity. Corporations have already infiltrated most governments and markets at such a furious pace that all that can be done is attempt to slow them down, while cells and organizations regroup and decide on a way to address the

many problems that have already arisen, and the many potential accidents that are in front of us. Assuming that inertia is always useful in disturbing capitalist production and distribution, one must ask how this principle can be applied to the current molecular invasion. Certainly, traditional tactics have some use, and electronic civil disobedience (ECD) will be of value, although it should be added that this is a time for hardcore ECD (blockage of internal communication systems, blockage of databases, the disruption of routers, etc.)

Softcore tactics like denial of service (DOS) can be of use in disrupting retail services such as assisted reproductive clinics (eugenics clinics by any other name), but most of the biotech industry is not about retail, so DOS is not much use in these cases except as a low-quality theatrical tactic with little pedagogical value. In the end, however, resistant culture always needs to find a means to fight fire with fire. In other words, how do we develop tactics using biological materials and processes?

In response to this question, CAE and some rogue scientists set about trying to form a model of direct biological action. The first unfortunate conclusion that we came to is that civil disobedience (CD) will not work in this situation. While inertia will always disturb a society of speed, it cannot be implemented on the biological front by blocking methods partly because the boundary and territorial models that CD was developed in response to typically have no place in the organic realm. Moreover, since our focus is on trying to intervene in the production of transgenic life-products, almost any action will have some destructive effect. This problem puts resistant agents in a very difficult position. We do not want to make it easy for capitalist spectacle to label resisters as saboteurs, or worse, as eco-terrorists. These terms are used very often and generously by authority and tend to have the profound effect of producing negative public opinion, which in turn allows state police and corporate posses to react as violently as they desire while still appearing legitimate and just. Escaping these labels completely seems nearly impossible; however, we can at least reduce the intensity and scope of these forms of labeling, and hopefully escape the terrorist label altogether.

In any real sense, the association with terrorism is completely unwarranted, since it is not possible to terrorize plants, insects, and single-celled organisms. The problem with GMOs, however, is that they are not open to the kind of destruction that occurs when someone kills a fly or swats a mosquito, because they are more than organisms - they are private property. Since capital values property over all (humans included), one can only expect the strongest types of denunciation and response to its destruction. In addition, there is already a very reactive history in regard to transgenic crops that can be of symbolic use to authorities. Test sites for new product lines of GMOs in the US, France, and India have been burned. This was and is flagrant sabotage. The location attacked was right.

Test sites are a key location to disrupt, because if the studies being done at the sites are corrupted, they have to be redone, thus causing a very costly type of inertia in the developmental system. However, tactical arson plays right into the hands of the authorities. Such action gives them the examples of hardcore sabotage that they need to label, harass, and arrest potential transgressors, as well as individuals and groups opposed to sabotage who have little more than a modest philosophical association with violent resisters.

One interesting element does emerge from the Indian burnings. The group responsible paid the farmer hosting the test site for the crop before burning it. The message here is

clear: Do not hurt the farmers/workers physically, psychologically, or financially. Agrarian complicity, in many cases, is nearly a given, because people have no real alternative to the markets dominated by the coercive power of the biotech industry. Grassroots harassment is an unacceptable tactic that the left has debated and is hopefully pushing aside as the Indian example shows. In the 1980s, some AIDS activists suggested that pharmaceutical salespeople should be harassed as a means of disrupting distribution and thereby leveraging a price reduction of the astronomically expensive medicines needed to combat HIV. This was a terrible idea then, and it is a terrible idea now. From the corporate perspective, workers are expendable and there is a large enough reserve labor army to fill the ranks, so this would have no effect other than making a working family miserable.

CAE believes that the best response to these ultimately unsolvable problems is the idea of fuzzy biological sabotage (FBS). The fuzzy saboteur situates he/rself in the in-between - in the areas that have not yet been fully regulated. This situational strategy was very well developed by Brian Springer in his backhaul video work and in his laser information conduit interventions. His idea was to take what was considered private property, but functionally was public property. A backhaul (off-air live satellite video feeds) was considered the property of the media, but since it was in the public domain of the reception of airwaves and existed without copyright, it could be copied, replicated, and even marketed (now backhauls are scrambled to stop this process). Springer was brilliant at finding these little cracks in the system and exploiting them. The fuzzy saboteur has to stand on that ambiguous line between the legal and the illegal (both criminally and civilly). From that point, the individual or group can set in motion a chain of events that will yield the desired final result. The opening activity - the only one to which the saboteur should have any direct causal link - should be as legal as possible and hopefully within the rights of any individual. The more links in the chain, the better from a legal standpoint, but extending causal chains increases the difficulty of controlling all the exponentially growing number of variables that could doom the action. For the most part, such actions will only have two phases - the legitimate or fuzzy act and the upheaval it causes. The authorities then have the legal conundrum of proving guilt by indirect action - an unenviable task for any attorney. Moreover, unlike CD, fuzzy sabotage does not require a physical confrontation with authority, and in many cases does not require any type of trespass.

If an action is done correctly, the fuzzy saboteur has an additional safety net supplied by the various governments of the world - plausible deniability. For centuries state forces have sabotaged one another by various means that cannot be proven within any judicial system other than by military field justice. Simply by creating a non-aggressive scenario, or denying activity all together, agencies of discord have avoided direct charges. This symbolic shield can be reverse-engineered to serve resistant culture. With any luck, the fuzzy saboteur will never have to use this shield, but if this is necessary it can create a platform for public attention where "tactical embarrassment" (to use the RTMark term) can be employed. It may be nostalgically reminiscent of 19th-century anarchism, when it was incumbent upon any member of the movement who was arrested to use the court or any other public stage to denounce the bourgeois system, but practically speaking, and for the health of the tactic, such public displays should be avoided at all costs. A single publicity battle can potentially be won through deniability and campaigning; however, a series of these occurrences will dilute the plausibility of the denial and allow the development of spectacular counter tactics by the authorities.

Like hardcore ECD, FBS is not a public process. CAE requests that those groups and individuals whose goal it is to spectacularize hacking and perform as activist pop stars to do the movement(s) a favor and leave this method alone - particularly in its testing stage.

The final question then is, who are the agents of FBS? CAE suggests the use of wildlife to do the deed. Microorganisms, plants, insects, reptiles, mammals, tactical GMOs, and organic chemical compounds can all be a part of the resistance. The use of living non-pathogenic biological agents as disrupters will depend on each individual's or group's particular relationship to these creatures, as well as on localized conditions. Obviously, considerable arguments will erupt between the various positions on what constitutes an acceptable relationship between humans and other living creatures, and how various creatures will be employed, but let us say at the outset that we are not proposing that sentient organisms be considered for suicide missions or other incarnations of sacrificial economy.

PRANKS

If FBS has roots, it is in the realm of pranks. Most readers probably have a story of a prank that they or someone they knew did involving a biological agent. Placing a dead rodent or fish (nature's stink bombs) in a heating duct at school or some other offending institution is one of the classics. However, these are not among the class of pranks that are of interest to the fuzzy saboteur. FBS pranks are not done for a good laugh, for public embarrassment, or simply to be annoying; rather, they should be done as a form of psychological disturbance - more along the lines of LSD in Castro's cigars and liquid refreshment before a public address (to use an example from the CIA's book of practical jokes). Pranks can be used to stir up internal institutional paranoia, or they can be used to divert attention toward useless activities. Pranks can provide their own unique blend of inertia.

For example, the release of mutant flies in research facilities and neighboring offices can potentially have a disturbing effect. There are all kinds of mutated flies available on the market. They come in various colors with almost any type of deformity one might desire. Labs use them for cross-generational study because they are easy to raise, reproduce quickly, and maintain unusual genetic codes. Choose a set of mutated flies and begin a steady release of them into biotech facilities (it also works well in nuclear facilities). They can be set free in lobbies, parking garages, parked cars, almost anywhere. One does not have to challenge a fortified site - the flies themselves will do the infiltration. If enough flies are acquired or produced, you just have to be near the site and release swarms of them. Trespassing is not really necessary, unless there is a need for specific targeting. It only takes the occasional observation of them on a regular basis for people to start wondering what might be causing the appearance of these strange creatures. Needless to say, the first conclusion will not be that some fuzzy saboteur must be letting mutated flies go in the offices. The imagination will provide more exotic scenarios. The key here is consistency, not quantity. Moreover, relying on the power of the rumor mill that develops in any workplace, we can be sure that the fear and/or conspiracy factor will be considerably amplified. A paranoid work force is an inefficient work force. This approach thus creates inertia in the system. In the best-case scenario, an investigation into the origins of the flies would be launched, which would burn more cash and waste even more employee time. In the worst-case scenario, the prankster would provide a topic of conversation at breaktime.

If there are other businesses near the research facility, let the flies loose in there too. Restaurants are particularly good locations, since customers are sedentary for a while there, and flies call attention to themselves in environments where food is served. This can have the effect of aiming local business owners' and workers' suspicions at what may be occurring in labs nearby. Needless to say, local tensions could easily increase, and those who never would join a movement could become unknowing cohorts or willing allies.

Pranks such as this one are easy and inexpensive. As for the flies, they really don't care where they are, as long as it's a location that corresponds to their adaptability range. As for environmental danger, this is negligible. Mutant flies have no adaptive advantage in the wild and their recessive characteristics are not likely to be selected for. They are not overachievers when it comes to survival, so there should be few worries about environmental pollution in any ecological sense. The pollution will be in the human psyche. And isn't it better for a mutant fly to soar free for the resistance than serve a lifetime in laboratory servitude?

For those who would like to have their own mutant fly hatcheries, they are fairly easy and inexpensive to start and maintain. The flies are free, and can be obtained on the web from the Bloomington Fly Center. To maintain the flies you will need fly bottles (they hold about 100 flies); however, if you are on a small budget, you can substitute milk bottles for this function. The fly food is made from molasses, yeast, and apple juice. To get the perfect consistency requires a little human power, but a machine to do this is also available (but they are costly). For optimum breeding an environment with a relatively stable temperature is necessary. The flies should be kept at a temperature between 18-25 Celsius with humidity between 40% and 50%. Flies are fairly robust, but must be kept away from extreme temperatures (especially heat). The life cycle is about one month, so producing a swarm (10,000) is a laborious, assembly line like task; however, maintaining a small amount over a long period of time is relatively easy.

TEST SITE DISRUPTION

Over the past forty years, resistant groups have made tremendous strides in terms of organizational principles. Many have said a happy farewell to central committees, unions, and parties, and replaced them with autonomous cells and temporary, single-issue coalitions with ever-shifting rotational leadership. "The people united will never be defeated" has given way to the more practical idea that tactical unity among resistant political configurations for an immediate and specific purpose can have a systemic impact in spite of differences and contradictions within coalitions. Such immediatism and decentralization has proven to be the best defense against infiltration and cooptation, as well as aiding in the creation, albeit temporary, of powerful popular fronts. Unfortunately, resistant tactics have not always maintained the same level of sophistication and complexity. This is not necessarily the fault of activists since tactical possibilities do not always present themselves as clear and easy. Further, as new contestational situations arise, the reactive tendency of radical subjects pushes them toward immediate action. There is little time to think matters through, because with each passing moment, the object of activists' political offense becomes increasingly entrenched in the system both materially and ideologically. Radical research and development is something of a luxury process, and so the balance between direct action and R&D is one organizational element that remains underdeveloped.

Such is the case with the response to GMOs. There has been a good deal of hard-line direct action, but the tactics are incredibly crude. The use of arson and vandalism by radicals as a means to insert inertia into corporate initiatives is a sign of desperation and a robust imbalance between thinking and acting. Whether one considers the examples of Professor Najundaswamy and his followers in India, José Bové and his followers in France, and especially the Earth Liberation Front (ELF) in the US, the destruction of assets has been of limited impact, and has functioned primarily as counter-spectacle ripe for recuperation. This is not to say that there are no advantages to such tools. Fire, for example, works on all crops; it is inexpensive to produce, and insures a devastating kill ratio. The problems, however, are also clear. The illegality of direct incendiary sabotage creates a host of difficulties for the perpetrators. As previously stated, this kind of sabotage allows for corporate culture to cry "terrorism," so they can represent themselves as the victims of extreme injustice. In turn, the state and corporate security apparatus grows in strength because sabotage also creates the opening for the successful petitioning by security agencies for increased funds and human resources. Moreover, pancapitalist spectacle can cast guilt through association on all resistant organizations, leading to more segments of the movement coming under direct investigation. This also helps create the public perception that all greens are at least potential eco-terrorist wackos. At the other end of the spectrum, saboteurs can count on long-term incarceration if apprehended.

The loss of committed activists to the prison system is not helpful in the long term. A short-term stay in jail for purposes of civil disobedience is fine, since those confined are returned to the ranks rather quickly. Political prisoners as living martyrs do not have a desirable or very useful status as long as other options are available. If one examines the example of state military sabotage, an optimized set of attack principles is revealed. First, only use the minimum amount of force necessary to accomplish an objective: Mosquitoes should not be killed with a shotgun. Second, focus the attack on the weakest link in the system.

The classic example is the Allies' strategy during World War II of bombing all the German ball bearing factories. These metal spheres were necessary for all vehicles. By focusing on their elimination, vehicle manufacture and field maintenance was brought to a near halt. Another principle that was reinforced during these bombings was the need for accurate and precise targeting systems (a wing of military research and development that has only accelerated in scope and sophistication to this day). Even from the military perspective, deficient as it is in financial logic, carpet-bombing a city to destroy one factory is an unfortunate waste of assets. While activists have done well on the second principle, they have done poorly on the first and third. Burning crops and labs is certainly overkill. Targeting is just as bad. One of the things that greens complain so much about is the potential death of non-target species due to certain GM products. Fire has the same non-target effect. In using the above principles and combining them with fuzzy sabotage, what is the best way to disrupt GMO research? The choice of research sites as a site of resistance is an excellent one. In spite of the fact that corporations generally get a free pass from the EPA and USDA to market their products, as long as they can produce minimal research that demonstrates that a product is "safe," they still must produce some research. If they fail to do so, the product line completely stalls. Since this type of research is incredibly protocol-laden in order to achieve accepted standards of scientific rigor, test contamination is very easy. Samples and study replicants are two fragile areas. If either are corrupted, the study has to begin anew, because the research will not generate the statistical power necessary to produce confidence in its validity. For example,

when the growth of worms is studied as an indicator of safety in regard to soil toxicity related to bt products, all that is necessary is to add more worms of varying weights to the sample. While researchers will probably notice that the sample has been tampered with, they would be unable to clean the sample. The study would have to start again.

The facility does not need to be burnt to the ground to place the desired inertia into the system. There is no need to kill non-target organisms (humans included), nor disrupt or destroy other research initiatives that are not causing any harm that may share a given facility. Such an action is cheap, requires minimal human resources and minimal force, and is specifically targeted. The lack of organic boundaries in ecological systems allows radical subjects to use corporate culture against itself for purposes of distribution.

Canadian organic farmer Percy Schmeiser had his fields corrupted and seed banks contaminated by neighboring Monsanto "Roundup Ready" crops. In Canada, biotech corporations have the right to inspect anybody's crops. After sampling Mr. Schmeiser's canola crop, they discovered this hybridization and slapped the farmer with a lawsuit for patent infringement. Mr. Schmeiser had been growing canola the "traditional" way for 53 years and wanted no part of GM cropping. Unfortunately, not only is he now a part of this system, he is now being used as an example of what will happen to those who refuse corporate crops. You will be attacked one way or the other. As this case has shown, the option for a countersuit is available, but private citizens fighting against capital saturated corporations in costly court battles do not have significant chances of winning. The part of this sad story that is of interest to fuzzy saboteurs is that private boundaries are not recognized as sovereign if a nonhuman organic agent crosses them. Have a problem with a test site crop? Go into free-range rat ranching (reasonably low cost), and release as many as possible near the offending site. Moles, gophers, ground hogs, rabbits, mice or any pest not susceptible to given toxins could also be released en masse near the test site.

After all, laws of private property, trespass, and vandalism do not apply to them. Again, the whole crop does not have to be destroyed; the sample just has to be damaged to the extent that it is no longer representative of the population from which it was taken.

HIGH-INTENSITY RESISTANCE AND PRECISION TARGETING

The question that must now be answered is what to do about the wide variety of potentially dangerous GMOs already fully distributed? In this case, the use of fire or other limited means is totally useless. It simply does not produce the kind of threat that would convince any major corporation to change policy, because it has neither the scope nor the impact on profits (at least not as long as there is corporate insurance and tax write-offs). Offensive mechanisms such as artificial selection are a possibility. For example, feeding Bt to a population of pests that is supposed to die from contact with it would eventually yield a subpopulation of pests that are immune to it. This subpopulation could then be bred to create a population that could be released into the wild where it would hopefully spread the resistant gene(s).

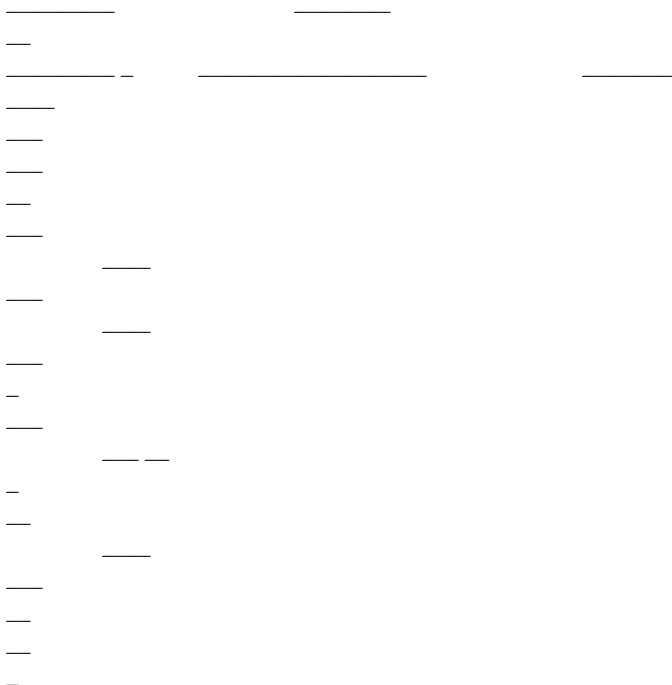
While this method would be good only as a long-term strategy, it could eventually have an impact in that it would force corporations to increase the speed (which always costs money) at which they had to respond to shifts in the pest population. At the other end of the spectrum, this type of breeding would not have a destructive impact on the environment, nor increase the pest rate for organic farmers. The downside to this potential strategy is that it is a low-efficiency method, and thereby would probably not be a great

enough threat to corporate profits to leverage a change in safety policy and research methods. The real solution, however, is precision in targeting systems. Any offending organism has its weak link, and it is precisely the same trait that supposedly makes it strong.

The gene(s) or biological processes that modify the organism can be targeted, and turned from a trait of adaptability into one of susceptibility. For example, Roundup Ready (RR)* could fall prey to this strategy. The herbicide Roundup (glyphosate) kills every plant in its path, including unmodified crops.

* CAE is not suggesting that RR is necessarily the best target relative to its potential for environmental danger; the example given here just illustrates the point. The preponderance of evidence (although it is not conclusive) does not show any real problems with RR. The primary reason RR could be considered as a target is because it is so common. The creation of an organic substance or creature that could have a devastating affect on RR would get the attention of all food source biotech companies. However, it is just as likely they would use force as a response. In the era of pancapitalism, only the corporations have the right to manage and control the food supply. If anyone else intervenes, it's terrorism. The danger with this roll of the dice is as significant to individuals as the potential dangers from undertested GMOs are to the environment.

Glyphosate works by inhibiting the enzyme 5-enolpyruvylshikimate-3-phosphate synthase (EPSP synthase), which is found in plants and microorganisms but (as far as we know) not in any other life form. EPSP synthase is a necessary enzyme for the organisms that do have it. It is used to synthesize aromatic amino acids, without which the organism cannot survive. In nature, EPSP synthase makes EPSP by bringing shikimate-3-phosphate (S3P) and phosphoenol pyruvate (PEP) together. Glyphosate binds the enzyme better than PEP and prevents this reaction from occurring, as shown below.



Thus, Roundup kills by literally starving the plants that it attacks. However, Roundup Ready plants have been genetically modified to produce a version of the enzyme EPSP

synthase that protects the plants. This version of EPSP synthase is a natural enzyme found in some bacteria and does not bind glyphosate very well. By genetically modifying the target plant to overproduce the resistant enzyme, the GMO producers insured that the RR plants are immune to the effects of glyphosate. Using pro-drug theory as a model, it may be possible to produce a biochemical intervention that could either specifically inhibit the resistant EPSP synthase that is present in the GMOs, or one that could set off a cascade of physiological effects that could retard or mutate the plant.

Two compounds already exist that may fulfill this function, both of which were developed or discovered by Monsanto itself. The best option seems to be pyridoxal 5 phosphate (P5P). This compound, when mixed with Roundup and exposed to light, will kill the enzymes that protect the plant. CAE knows it works in the lab, but we have yet to field-test it. Killing an enzyme in a test tube is not the same as killing one in a plant. CAE does not know how well a given RR plant can defend itself against the introduction of the compound (either from protection from the cell walls or from increased manufacture of the enzyme by the plant at a rate faster than the compound can inhibit the enzymes). However, if it works, this compound is simple, safe (it is used in vitamins), and fairly inexpensive when produced in bulk. Because it is such a simple compound, it cannot be patented, so no civil liabilities are associated with it. Instructions for the creation of the photocombustible compound are available from the US medical library. This defense system is available for field-testing now, and the real strength of this system is that it will only affect the targeted plants (those using Roundup). The best civil action that CAE has in development is a model to bond a colorigenic compound (dye) onto the RR enzyme. A colorigenic compound is one that has been synthesized so that it is initially colorless. Upon reaction, the compound is modified and releases a dye. Again, we would exploit the fact that GMOs carry a specific EPSP synthase that transforms chemical compounds. The trick is to create either a PEP or a S3P look alike that is actually a colorigenic compound that only binds to resistant EPSP synthase, but not to the plant's natural EPSP synthase.

Upon binding to the enzyme this compound could then release a dye, thus making all RR crops an undesirable color from the point of view of the consumer. There are three requirements for this application to be successful: 1) That a colorigenic compound can in fact be created; 2) that the compound has an affinity for the active resistant RR enzyme that is substantially greater than its affinity for the endogenous enzyme; and 3) that the compound and the effects that emerge from its application are harmless to living creatures. The best-case scenario is that the compound can be made using FDA-approved food coloring already available and deemed safe for human consumption, as opposed to producing the dye from scratch.

If the dye can be developed, it would function as a contestational marker in the fields, and possibly in supermarkets and homes. Home testing kits are a viable possibility. This marker would act as a DIY labeling device that could potentially force a better labeling policy out of the corporations. Finally, it would demonstrate to corporate culture that the future of biotechnology and transgenics in particular will be made a matter of public policy one way or another. The hope in transforming this potential into reality would be to demonstrate to all corporations that they are vulnerable, and that the public interest must be a part of their testing and distribution procedures. With such leverage, it is possible that the corporations would begin kill switch and other safety feature research on their own simply to avoid any such potential profit disruptions (it would make great public relations advertising at the very least). One must remember, however, that this plan is not a quick fix; development could take years, but it can be done. Precise targeting is

very difficult to do. Much like advanced electronic hacking, genetic hacking and reverse engineering are very specialized tactics. This is why corporations do not at present fear reverse engineering. The GMO revolution has been bloodless, because resistance does not have the capital to mount a counter-offensive on the molecular level. Much like fighting nomadic (virtual) power with nomadic tactics, the current molecular invasion has to be confronted in the molecular theater of operations. For the resistance to progress on any credible, effective level, rebel labs and rogue human resources in molecular biology have to be developed.

With the combination of traditional, electronic, and biological means of resistance, hopefully enough inertia can be introduced into the biotech industries that there will be time to do long-term, replicated studies that will sort out the useful products from the pollutants for profits. We can only hope that the processes and products that pose a threat to the environment will eventually go the way of DDT, but now what is needed is time in order to produce the cautious attitude and the rigorous science necessary to introduce GMOs into fragile ecosystems.

THE REAPPEARING OF THE PUBLIC

“Is the claim as to the public quality of all media, hegemonic as it may be today, really tenable? A most simple test will immediately disprove such fantasy: Try and enter your main national television station. In most cases you will not even make it into the lobby. Another test: Try and publish your opinion on a certain political issue in a major (or not so major) national (or not so national) newspaper. In the case of the television station you will experience a significant likelihood of failure, unless you are Rupert Murdoch. Otherwise you will be lucky if they let you pass on to their car park. And in the case of the national newspaper you may not fare any better, unless your name is Jürgen Habermas. If the public sphere is characterised by universal access, and what sense would it make if it wasn't, how can it ever be justified to credit a broadcasting company or a mainstream newspaper with the qualifier 'public'?”

- Oliver Machart (*Media Darkness, in: Debates & Credits - Media / Art / Public Domain, '03*) -

Interfacing with the public?

There is no public, but where are our publics?

In more than one sense, the practices and promises of tactical media are tied up with the idea that in the last decades we have witnessed the disappearance of The Public. One big reason for this is the explosion of heterogeneous media and heterogeneous media practices, and the fact boundaries between media spaces have become increasingly porous (i.e. between media domains that are nationally and culturally distinct). Another reason is that the idea of "normal people", on which the concept of The Public relied, has been thoroughly undermined, not in the least part because these people increasingly came and put themselves in the picture, aided by media. (Thus, the differences among various not so normal people can these days no longer be easily airbrushed out.)

Funnily enough, also for those media practitioners, artists and activists, who feel enthusiastic about the disappearance of The Public, the question of the public is no less acute! In situated media interventions, the particularity of context tends to take the foreground, and precisely not a disembodied generality such as "The Public". Here margins count as a resource rather than as constraint, and they can and should be celebrated as such. But when it comes to these kinds of projects, the question of who exactly one is interfacing with often comes up as a pressing concern. A totally eclipsed public, that is, an empty hall, an empty street, or empty chairs, many have found out, is not an ideal situation either. And when the public "just doesn't get it", we can't just dismiss the possibility that there may be a problem with the performance itself. And what if one ends up "not liking" one's public? More importantly, a constructive picture of who or what one is trying to prompt with a given media intervention, remains totally crucial. While The Public has disappeared, we thus keep and should keep asking where/who/what is the public?

In working with that question, the issue of the "erosion" of the public domain, especially with the rise to dominance of commercial mass media, and, it should be added, after the disappearance of The Public, inevitably comes up. In this way, it is easy to get caught between excitement about the disappearance of The Public, puzzlement about appropriate publics, and resistance to the "erosion of the public domain". But, that last diagnosis might also prompt us to go and look for the missing public, and try to conjure one up. The question thus is, what are the techniques and tactics available, and which should be developed, to make a public appear?

CONSTRUCTING THE DIGITAL COMMONS

A venture into hybridisation

By Eric Kluitenberg, March 2003

Democracy can be understood in two notably distinct ways. In the institutional view democracy is understood as the interplay of institutional actors that represent 'the people' and are held accountable through the plebiscite; public votes, polls and occasionally referenda. The second view on democracy is radically different in that it sees the extent to which people can freely assemble, discuss and share ideas about vital social issues, organise themselves around these issues, and can freely voice their opinions in public fora, as a measure for just how democratic a given society is.

In the second view the state, as the suspect usual embodiment of institutional democracy is not necessarily ruled out. It is, however, clearly delimited in its role as the carrier of democracy. Rather, the state would be seen here as the unfortunately necessary institutional actor that should guarantee the space to exist where democracy as understood in the second view can unfold.

We(1) can put name tags on both views. We speak here about a shift from representational democracy towards participatory democracy. Implied is also a secondary shift, away from the state and towards the by far no less problematic notion of community as an organising principle for democratic social ordering.

Now, my purpose here is not to write an essay on political theory, but rather to prepare

the grounds for a discussion of a concept that is closely aligned with these macro-political trends, and that has surfaced recently in a range of different discussions, and across a range of different disciplines and contexts: the notion of the "commons".

Interestingly the concept of the commons has popped up quite persistently in discussions about the social dimension of communication and networking technology, and the shaping of an emerging network society. What all these discussions and projects share is a concern that the potential of digital networking to create an open and democratic knowledge and communication space is squandered in favour of narrow short term economic interests. Interests, however, that are promoted by some of the most powerful economic and political players on the globe today.

That the figure of the commons pops up in this context may hardly come as a surprise. In societies saturated with media and communication technologies, social processes cannot be understood in isolation anymore, but only in relation to the interconnectedness of all social, political and cultural domains through the various systems of real-time mediation: television, radio, satellite communications, internet and digital networks, cell phones and third generation wireless media. Conversely the space of electronic communications cannot be separated from the real-life contexts it is interwoven with, the remnants of musings about a disembodied 'cyberspace' now lie dormant in dead websites as pre-historical remains, the vestiges of the virtual, much like the palaeontological study objects of the various extinct dinosaurs species.

Over the last few years the real-existing powers of vested interests have come into play quite dramatically in the on-line world. After the dotcom invasion and the general push for commodification of the information space, the powers of policing, surveillance and control moved prominently into the digital networked domain. The great experiment of an unfettered communication space that internet as a public medium seemed to provide now seems more like a historical and temporary window of opportunity. If we still care about a common space of knowledge, ideas and information, mediated world-wide by networked digital media we can no longer accept that as a given, i.e. as 'naturally' embodied in the Internet. Instead the space of interconnected digital networks should be seen as a new site for political controversy and struggle, where the open zones, the on-line gathering places, the shared resources should be safeguarded and protected from the powerful forces that threaten them. There is still a huge potential for the digital commons, but it requires the formulation of a political agenda that needs to be actively pursued.

All this hints at the necessity for a new set of conceptual tools that can help us to understand the conditions under which these new social dynamics unfold. The first dynamic that should be grasped is that of hybridisation: hybridisation of media and communication modes, hybridisation of space, but also hybridisation of disciplines, and hence also hybridisation of discourses. Hybridity is a defining condition where the figure of the commons should to come into play.

No clean cuts here, no hygienised or independent cyberspace, no virtualisation, but also no stable 'real' that puts our feet on the ground -not even on the battle field, even though people still die there. No escape from the dirt: the domain of hybridity is a messy place.

DEFINING 'THE COMMONS'

Main Entry: common

Function: noun

Date: 14th century

1: plural: the common people

2: plural but singular in construction: a dining hall

3: plural but singular or plural in construction, often capitalized

a: the political group or estate comprising the commoners

b: the parliamentary representatives of the commoners

c: HOUSE OF COMMONS

4: the legal right of taking a profit in another's land in common with the owner or others

5: a piece of land subject to common use: as

a: undivided land used especially for pasture

b: a public open area in a municipality

(Source: Webster on-line dictionary)

The origin of the concept of the commons dates back to the 14th century and refers to the notion of "common land" as it emerged in England at that time. The idea was introduced together with protective measures to tackle the problem that walking paths, required to connect disparate villages and regions with each other, were continuously transformed into farming land, i.e. privatised, thus cutting of the connections between various communities. It turned out that for these paths to remain open they needed some form of public protection, and this protection had to be enforced for the greater good of the "commons".

In their conversation on the digital commons by the members of the Raqs video collective, co-founders of the Sarai new media initiative in Delhi, Monica Narula recounts that particular history:

"I was told by a friend of the ramblers in England - who go on long walks for the wonderful pleasure of taking in "mountain, moor, heath and down" - that when they walk, they do so partly to keep public paths public. Many of these walking routes have emerged from being trod by countless people over countless years. By law, if they are not used by the public to walk on them, they will revert to private ownership."

(by Monica Narula, "Tales of the Commons Culture", in Mute Magazine, London July '01)

So there is an almost Wittgensteinian formula here. For the paths to remain common land they have to be used, i.e. the common space is defined and constructed through use. It is not a given, it is a product of living social praxis (indeed like language), and it evolves over time. It is not permanent but can be maintained over many generations, just as long as the next generation actually cares enough about the commons to actually use them. Importantly the commons here is also not a passive principle, some kind of available resource that can be used, or not used, according to will. If no one takes responsibility for the commons (here for the common land of walking paths, the space of connection) then the commons disappear. It is organically interwoven with the very fabric of the communities who share this common space.

The commons at first sight is close to the wider notion of public domain. In our FAQ

(Frequently Asked Questions) about the public domain, we, a group of writers from Amsterdam, defined the public domain as follows in '99:

"The public domain is traditionally understood as a commonly shared space of ideas and memories, and the physical manifestations that embody them. The monument as a physical embodiment of community memory and history exemplifies this principle most clearly. Access, signification, disgust, and appropriation of the public monument are the traditional forms in which the political struggles over collective memory and history are carried out."

(Source: FAQ about the Public Domain - a.o. at:
<http://amsterdam.nettime.org/Lists-Archives/nettime-l-9901/msg00063.html>)

The American writer and policy strategist David Bollier however points out that the wider concept of the public domain should be differentiated from that of the commons.⁽²⁾ The public domain in his view implies a passive open space that can be shared by anyone and everyone, and thus belongs to everyone and none at the same time. The public domain invites the problem of responsibility. Since there is no boundary implied, nor any kind of ownership, neither private nor collective, nobody feels responsible for the resources that reside in the public domain.⁽³⁾

The concept of the commons on the contrary implies boundaries. The commons refers to a resource, to common land, to common means of production, knowledge or information, that are shared amongst a more or less well-defined community. There is ownership here, but the ownership is collective, rather than individual. Furthermore, the rules of how these common resources are shared, and amongst whom, are not necessarily fixed in intransmutable rules. In the case of a digital commons, the notion of the commons no longer refers only to a territory, i.e. to a geographically situated community, but can also refer to a group of people who share a common interest or set ideas, yet who may be distributed potentially worldwide. Here we see where the hybridity comes in: the commons is extended from a set of shared physical resources (common land) to an immaterial domain (ideas, knowledge, information), and secondly the commons is extended from something that is necessarily geographically situated (walking paths) to something that is shared across geographical divides, because it is electronically mediated via digital networks. But in all of these cases the commons are not entirely 'free'. There are rules and mechanism of access, and limitations on use that are defined by the shared values of the community sharing these resources.

I do not wish to sketch a parochial image here, there is by no means a nostalgia for the traditional (village-) community. The commons communities can take a host of different forms, informal, permeable, professional, situated, dispersed, formal, or anarchic. But they share a set of common characteristics that move them away from the free-for-all notion so often attached to the early developmental stages of the Internet as a public medium. Most importantly the concept of collective ownership implies responsibility, and the survival of common resources rely on the willingness of people to take responsibility for them. Often the commons take their vitality from their connectedness to real-life embodied needs and issues, not from their separation and disconnectedness from these earthly concerns - this fleshes out a further sharp distinction from the cyber-utopian discourses of the late 90s. It re-emphasises the need to explore the conditions of hybridisation that inform the digital commons and that require specific strategies to make them viable.

HYBRID MEDIA

The first immediate strategy to engage this new terrain of hybridity is to no longer consider the networked media as separate from the rest of the media landscape. On the one hand there has been a much discussed technical convergence of media, where the means of production of traditional media have become increasingly digital and thus promote cross-connections between formerly separate media forms, disciplines, and fields of application. But more important and interesting is the paradox that while a plethora of new media forms emerged because of digitalisation of different media forms and because in the course of this development media production tools became radically simplified and cheaper, this trend at democratisation of the media on the level of its technical realisation has in no way threatened the dominant position of mainstream media in determining public discourse. So where is that dreamt of democratic media space?

In fact enormous concentrations of media production facilities, companies and distribution lines in the hands of only a very few corporate media giants has pursued the digitalisation and convergence of media as much as it supposed democratisation. This move towards integration (horizontal and vertical, i.e. not only production but also distribution of media products) has seriously diminished the diversity of the mainstream media landscape. Standardisation of formats and one-sided programming choices are exported worldwide in a move towards unification rather than diversification. The alternative media have been left behind in a marginalised position, not able to communicate to a wider audience beyond their own constituency, often relegated to the ghetto of the Internet.

The counter strategy here is hybridisation of the media themselves. Where the corporate mainstream embraces hybridisation as a way of extending its market share, the 'other' media seek to broaden their communication space. It is here where the lessons can be learned from the sovereign experiments that have been conducted throughout the late nineties by the artistic and subversive media producers: the successful mediator needs to be platform independent, must be able to switch between media forms, cross-connect and rewire all platforms to find new communication spaces. In this context we see where the experiments with web casting and cross connections to radio, television, cable and even satellite become extremely valuable - they become tools to break out of the marginalised ghetto of seldomly visited websites and unnoticeable live streams.

All these cross connections can create a sovereign media space that is not defined by functional interests (power, money, market share), but orient themselves primarily on establishing a new kind of public communication space, no longer the exclusive domain of the professional media elite.

HYBRID SPACE

The second strategy is that of hybridising different spatial logics. The commons today exist primarily in the sphere of mediation, which by virtue of satellite and network connections have become potentially global. While places do still matter very much, if only because more than 80 percent of the worlds population is disconnected from the sphere of electronic and in particular digital mediation, social discourse and communication and thus ultimately the language of power itself is shaped in this sphere of electronic mediation. It has become a common place observation that in war the centres electronic

mediation and communication, the relay points, have become the prime target of any attacking force.

But this electronic mediation only makes sense if in the end it reconnects to embodied material reality. If we want to make the new sphere of power democratically accountable, and carve out the open spaces for unfettered public communication, we need to think about models that can address the hybridity of these spaces; the connections and disjunctures between the places in which people live and the sphere of electronic mediation that increasingly determines the conditions under which they live in those places.

There are no simple formulas to describe how these different spheres actually relate to each other, the connections are manifold and often site specific, yet the complexity is too great to go by them on a case by case basis. So we should approach them with necessarily incomplete models and descriptions. What we can do is to explore the spatial logic and social dynamics of the physical public space and the mediated public communication spaces. Rather than theorising them it seems more productive to approach them by creating specific conditions of experiencing the differences and connections between these two spatial logics. This move from discourse to experience invariably brings us to the domain of the arts.

REBOOT

In 1999 we, De Balie centre for culture and politics in Amsterdam and the Academy of Media Arts Cologne, organised an interesting experiment that very consciously explored the relationship of the physical public space, in transitory setting and where possible connected in real-time to the 'place-less' electronic media space. The project called reBoot - a floating media art experiment, put about 50 artists (German and Dutch) together on a big party boat for a week, which was transformed into a floating media laboratory and presentation and performance space. The boat moved between Cologne and Rotterdam and Amsterdam, and docked in the cities Düsseldorf, Duisburg, Emmerich, Arnhem and Rotterdam (all on the river Rhine, and finally ended up in Amsterdam. (reBoot website: <http://www.khm.de/~reboot/>)

The interesting experience was first of all the fixity of the media location of the project, a web site with a fixed URL, some live streams with sound and video material and TV broadcasts mainly on Amsterdam cable television. During the week as much material as possible was released through these fixed media channels. The permanently changing position of the boat and the artistic experiments that were conducted on board in reference to the changing scenery and context the boat were in sharp contrast with the fixed media location. Suddenly the media location seemed to be much more of a stable point, a 'place', a reference point, than the physical space.

It introduces us to a reversal of perception that will become increasingly strong over the coming years as we stand on the threshold of the wide adoption of a new generation of wireless media.

Increasingly our physical location will become transient and fluid, whereas our media location becomes increasingly fixed. There seems to be a compelling need to always be connected, to have a fixed and continuously accessible media location, while at the same time there is a growing anxiety and desire for control over the new fluidity of the physical location. As wireless and mobile media become more sophisticated they increase the

potential for physical mobility (since you can now be reached anywhere and you can work everywhere), but this mechanism only increases the anxiety about the loss of grip on the "other's" whereabouts. Today this is already exemplified in the continuous question by mobile phone users "Where are you?" to the person at the other end of the line.

URBAN INTERVENTION

Where before the social space was the town square, the parks, the halls of assembly, the sites of demonstrations and mass gatherings: the sites where social discourse was shaped, now electronic media introduce a new scale to human affairs and social relationships. This is nothing new. It is an ongoing process since the invention of telecommunications, radio and television, and the many new communication technologies that followed them. Yet, the feeling remains that whoever controls the city space holds true power. The sway of control over public urban space projects a strong sense of power that also works in the media environment, perhaps as a sign of the lost 'real', who knows?

If you want to have stake in shaping public discourse you need to create not only a hybridised presence in the media environment beyond the ghetto of the Internet, but this presence should also manifest itself on the streets. It is in the interplay between these two spaces in particular, urban and mediated, that social discourse and communication takes shape. If these spaces should be opened up for alternative arguments, ideas and participants, hybridised forms of intervention are required.

I worked together with Moscow based curator Tania Goryucheva on the Russian / Dutch art and media project "Debates & Credits - Media Art in the Public Domain". For the project four artists and artist collectives from Russia and four from The Netherlands were invited to design interventionist media projects for the public urban space. These projects were finally executed in the fall of 2002 in Amsterdam, Ekaterinburg and Moscow respectively.

The project was triggered by the obvious crisis of the urban public space in Moscow. The city is completely overgrown with commercial advertising, a new form of propaganda. Driving around the city one is struck by the pervasiveness and aggressiveness of this new urban visuality. The advertisements have escalated into a completely over-dimensional scale. Billboards transform into giant kinetic sculptures, the original structure of the city layout at times disappears completely in a sea of billboard messages, competing for attention. At other times entire buildings are transformed into a corporate message, while elsewhere historical buildings and sites are re-branded as a monument for a mainstream brand of beer or a luxury car producer.

The city space seems out of control, fallen into anarchy. But when we started to investigate how to place our artistic projects inside this public space we found out that this seemingly anarchic out of control space was in fact tightly regulated. So much so that some of the projects planned for the Moscow edition of the project had to be executed without any permission (and with significant risk), or cancelled or reframed.

The project looked at public space deliberately as a combination of physical and media spaces. The artists also developed a wide range of different interventions that somehow played with this double character of social space, from small scale street performances (filmed and broadcast on television) to spectacular mobile projection actions in charac-

teristic spaces in Amsterdam and Moscow, art works prepared specially for TV and in Ekaterinburg also for outdoor electronic screens in the city centre, projects for public transport sites, wall paintings, but also an internet forum on legality and illegality initially connected with street interventions.

These interventions, often poetic, at times confrontational, sometimes intimate, personal, sometimes spectacular, can be seen as attempts to develop models for opening up urban and media spaces for other forms of social communication that deviate from the mainstream norm. The estrangement of these spaces by the intrusion of alien elements in the mainstream public environment breaks the norm of these spaces and can (temporarily) open them up for a variety of alternative discourses, cultural forms, and ideas.

(Debates & Credits - A Dutch / Russian Art / Media Project:

<http://www.debates.nl>

<http://www.balie.nl/d&c>)

HYBRID DISCOURSES

Finally it is important to note that the figure of the commons has emerged across a wide variety of disciplinary contexts. This implies that the adoption of this concept by all these different disciplines gives rise to hybridisation of different disciplinary discourses. Besides the concept of the digital commons as put forward by the RAQs and Sarai group from Delhi, two other strong initiatives have emerged that embrace the notion of the commons in the struggle for a more open and democratic knowledge and information space.

* The Information Commons (<http://www.info-commons.org>)

The Information Commons is a project that stems from the American Library Association that sees a big threat in the commodification of the digital information space and the imposition of ever stricter copyright rules and Intellectual Property Laws. They see this development as a mayor impediment to their appointment to make as many information and knowledge resources available to the wider public as somehow, anyhow, possible. Where technically the digital media hold an enormous potential for their mission, the new legal frameworks, most notably the Digital Millennium Copyright Act (DMCA) pose increasing limitations on their ability to fulfil their mission.

* The Creative Commons (<http://creativecommons.org>)

Similarly, the Creative Commons is another project that reacts to the stringent limitations imposed by new legal systems such as the DMCA on the digital world. But here the project is coming from the side of Information Law. Driven primarily by information law specialists Lawrence Lessig and James Boyle, the creative commons offers a set of licensing systems that enable people to release their intellectual products with various degrees of freedom. Lessig, Boyle, and many others are afraid that the ever stricter IPL frameworks stifle cultural and intellectual development, and in the end will kill-off the creative and innovative potential of digital networking. Cultural development has always relied intrinsically on the exchange of new ideas and innovations, and should be considered an

incremental process. New forms and cultural concepts don't just drop out of the sky like some deus ex machina, they are created by dialogue, contention and disagreement. The question of 'ownership' here is in any case questionable, and in many cultures actually non-existent when it comes to cultural concepts, forms and ideas.

Beyond the rhetoric of innovation it is important to recognise that a democratic society and a democratic mode of social communication cannot exist without open access to information, knowledge, and ideas. Even more so it requires the possibility for citizens to get access to this variety of communication spaces I sketched here; physical, urban, and mediated. These resources and spaces are no natural givens, no passive entities, they need to be created, protected and maintained, they are the commons, that what is shared by a community of people who care enough to sustain them through actual use.

REFERENCES / NOTES

(1) "We" should be understood to refer to a number of theorists who have circled around this conceptual shift. Most recently Naomi Klein critiqued the World Social Forum for losing sight of this important political distinction (Klein, *The Hijacking of the WSF*, Jan. 20, 2003)

(2) See David Bollier's website for further details: <http://www.bollier.org/>

(3) There is a further complication that outside of the Anglosaxonic cultural sphere the notion of public domain and its translations means a host of different things - the concept of "la domaine publique" in French for instance refers strictly to the domain of the state. The commons as a term remains by and large untranslatable since the notion of common land is not a transferable concept, but at least it does not give rise to erroneous cross-language interpretation.

AS POWER BECOMES TRACEABLE: RAISING THE STAKES ON CRITIQUE

By Noortje Marres, August 2003

Among the many troubling and bizarre features of contemporary politics, the following apparent paradox can be found: Informationalisation has brought along enormous increases in the traceability of the doings and dealings of the powerful. But the disruptive power of the exposure of these activities to the public, today seems especially low. After information technology, the going about of those in power and their abuses, are increasingly documented, and the resulting records are increasingly susceptible to leakage to the public. Email is an obvious example. In the run-up to the last Iraq war, a message by an official of the National Security Agency (NSA), which requested "aggressive surveillance" of UN Security Council Members Angola, Cameroon, Chile, Bulgaria and Guinea, made its way to the newspapers. (1) During this time it was also being widely reported that the US was twisting the arms of the above countries, making trade- and aid-related threats, in order to extort from them support for the war. But these reports did not develop into a full-blown scandal. There are hosts of other recent examples of such "failed" scandals - to name just one: the report of the Dutch bank ABN/AMRO Bank being in bed with the British INSYG group, a producer of cluster bombs. Dodgy activities of political and business elites are increasingly recorded, and they circulate ever more widely, but in many cases they fail to cause upheaval.

Obviously, there are many complex reasons why the availability of more scandalous reports does not necessarily lead to more scandals, and many interpretations of this troubling situation are possible. One explanation is the fact itself of the traceability of the abuses of power, and the circulation of the records of them: The more disturbing facts circulate, the less disturbing (i.e. the more acceptable) they seem to become. The sociologist John Thompson argues that with the increases in traceability brought along by information technology, the boundaries of the public and the private are being redrawn. With so much of social and political life being recorded, previously private and secret dimensions of life are now there for all to see. In that sense, you could say, it is not surprising that the publication of "private facts" about big business and politics, including the questionable ones, loses some of its shock-value. Such facts are now simply part of the horizon of social life. But, if such a diagnosis makes sense, then there are some potential disturbing consequences for critical information practices. If critical information about the activities of the powerful no longer has the capacity to raise any eyebrows, what then is the point in the collection and publication of such information?

One critical information practice of which such questions can be asked is "the cartography of power". Media artists, activists and researchers have in recent years set up several mapping projects that aim to make visible the formal and informal relations that organize business and politics. (2) Such critical cartography projects take advantage of precisely the increases in the traceability of political and powerful actors, events and issues, referred to above. They bring into view more or less hidden relations among political and powerful institutions. The wide circulation of similar facts in the mass media, and the lack of disturbing effects that this has, raises questions about the point of this kind of work as a form of critique. If reports of the dodgy doings and dealings among those in power appear to have little shock-value, what then is the point of such projects? Rather than drawing the conclusion that critical information practices are apparently useless, it is far more important to see what this situation teaches us about the constraints on political criticism in the current media situation. Taking into account these constraints, critical information practices like the cartography of power, I want to argue, turn out to provide us precisely with important sensibilities.

The failure of scandals to materialize when more and more reports are circulating that call for scandal shows us, among others, that there are very specific constraints on good and effective critique. With reports of abuses by powerful elites circulating as a matter of course, without causing much upheaval, it becomes obvious that only under very particular circumstances does a critical claim become tenable, politically speaking. With so many potentially scandalous situations being recorded, and so many of these records circulating, it is clear that claims made on the basis of them, acquire the capacity to shock only under very specific conditions. To give one example, the claim that current intellectual property regimes risk to make it impossible to fight AIDS in Southern Africa, only really began to hold, politically speaking, when big pharmaceutical manufacturers finally backed off from its lawsuit against the government of South Africa, which it had instituted to keep this government from distributing generic AIDS drugs, in 2001. Before that event the claim could still be downplayed or simply ignored. But in order to produce that event, thousands of meetings had been held, mails and letters written, phone calls made, not to mention the innumerable conversations during dinners, and in hallways etcetera.

Everyone involved in critical information practices of course knows that it is only under very specific circumstances that critical claims become tenable, politically speaking. But this fact tells us something about the nature of critique, in a context that is overflowing

with critical information. For one, it shows that critique these days derives its force not so much from revelation, to the extent it has been assumed to do in the past. With so many critical reports circulating, the point of critique is not so much, or at least not only, what it can reveal to be the case, the question is more whether any given critical claim acquires social or political strength. So much is known. In that light, what matters most is to figure out when and where, what claims are pertinent. And to strengthen critical claims, so as to make them tenable in those situations, to the point that they can only be ignored or denied at great cost. (3) To put it bluntly: You can show that the rich are in part responsible for the recent increases in poverty. However, seeing that this fact is not exactly a secret, the critical question becomes how such a claim can be inserted pertinently into social practices, whether it is a dinner conversation, an outdoor event, or a debate.

The "constructivist" point that claims have to be made to hold, that they aren't true and shocking in and of themselves, in some sense runs counter to the critical spirit. One reason for this is the type of claims critique is concerned with: here claims often deal with issues of major injustice, issues of violence and poverty. When it comes to such issues, the relativistic point that it depends on contingencies whether a claim is politically viable or not, is in many senses a tasteless and perverse point. For people living with AIDS in Southern Africa the fact that without access to cheap generic drugs, medicine distribution will not get off the ground in this country, is a hard fact in the strongest sense of the word. Another reason why critique is traditionally not interested in the idea that claims have to be made convincingly, and aren't convincing in themselves, is that critical theory - as it goes back to the Frankfurter Schule and to Marx - characteristically operates by positioning itself outside the political game of having to convince others. This also goes to a degree for critical practices of more concrete case building and claim making. Critical theory and in a sense, critical practices, derive their force from this move beyond debates in which participants have to convince the others. Critical theory classically declares, with more or less absolute authority, what is the case, irrespective of what others claim. These days, however, instead of making transcendental moves, critique takes detours.

Critique, one could say, these days derives its force from finding a place for itself where a pertinent language can be developed for its claims, and where they can be nourished with passion. Critical claims depend critically on such a movement, if they are to take on any significance. To return one more time to the example of the fight for generic drugs in South Africa, without the many discussions among people living with AIDS in South Africa and elsewhere, and the many events organised by them, the sense of commitment, strength and tragedy that is connected with the issue would never have been fed into the claim against the pharmaceutical companies, and for generic drugs. Without it, the claim would have remained empty. Also, the claim derived its wordings at least in part from these discussions and events. That is also to say, the passions that derive from rock solid facts that are politically speaking not (yet) tenable, as the horror, the courage and the humour that life with AIDS gives rise to, are among the great resources of critical practices. Infused with language and passion, critical claims can sometimes be taken on the road, to be presented to a target. However, as critique feeds on passions and language in this way, it also raises the question of return: will the claim that is taken on the road ever return to those places where effort and energy were fed into them?

But, to build a critical case, what is also required besides a passion behind it, and a language to phrase it in, is a sensibility for the specific political configurations in which the case is to be inserted. A critical claim also derives its force from how it plays on and

takes advantage of the power-relations in which it intervenes. It requires a target, a location, and good timing, among others. It is in this respect that critical information practices like the cartography of power may be of use. To expect that the things revealed by cartographies of power are enough to generate critical claims all by themselves, is absurd. The cartography of power is done in a context that is already overflowing with critical information. In this situation, it precisely becomes obvious that for a critical claim to work, much more is required than the revelation of dodgy activities of powerful individuals and institutions. For critique to hold, passions must flow into it, a language must be developed for it, a voice must be found to speak it, etcetera. But, as an activist support system that helps to make its audiences sensitive to the political configurations in which critical claims are to be inserted, critical information practices like the cartography of power might prove very valuable.

- (1) [Link to observer, guardian](#)
- (2) These projects will be discussed as part of the panel: tactical cartography
- (3) Perhaps here the order of point 1 and 2 should be reversed. //also point out that this goes as much for "dinner conversation" as for grand critical politics at the global stage

1 IN 32

The Speculative Archive for Historical Clarification, 2001

The Speculative Archive for Historical Clarification is a long-term project that produces documents that investigate the political and cultural implications of state self-documentation. Its work focuses on the processes through which covert government activities are documented, classified for reasons of national security, and, at times, selectively declassified. Founded in 1999 by Julia Meltzer and David Thorne, SAHC has recently completed a series of interviews with government officials involved in the regulation and release of secret government information. Below are excerpts from three of these interviews.

INTERVIEW WITH CHARLIE TALBOT

Could you state your name and position?

My name is Charlie Talbott. My position is the Deputy Director of the Directorate for Freedom of Information and Security Review in the Pentagon.

How does someone formulate a request for documents pertaining to a specific subject? Are they assuming that secret materials must exist?

People who make a request are informed because they know that there is something on the subject matter. They don't know exactly what sometimes, but they know that there is something. To give you an example, every time we have a military conflict anywhere in the world, you can expect a Freedom of Information Act (FOIA) request to come in later for all the records related to that. The best example I can give you is near the end of Jimmy Carter's administration, when we had the hostages in Iran and the aborted attempt to rescue them. After that we had The Washington Post come in and ask for everything on the planning - everything - and it was at that time, paper stacked end on

end, about 32 linear feet of paper for the planning of that raid. Just the planning. So they wanted everything on that - they wanted 32 linear feet of top-secret information. To make a long story short, we went into FOIA litigation, which took ten years to litigate through the court, and what we released finally was a stack of papers about this high, about 1 linear foot, that was redacted heavily, and also some maps on the raid. That took 10 years of litigation.

Has the rest of that material subsequently been declassified?

I have absolutely no idea, I don't know where it is or what happened to it.

INTERVIEW WITH LEE STRICKLAND

Could you state your name and position?

I'm a career intelligence officer with CIA. For the last year I have been a visiting professor here at the University of Maryland, a joint appointment between the College of Information Studies and the College Park Scholars Program. I've had several positions at the CIA. I'm a litigator for the office of general counsel and thereafter I moved over and managed the FOIA program. Most recently I was Chief of the Information Review Group and manager of all of the disclosure programs. Everything from Freedom of Information Act (FOIA) requests to the CIA's historical program, JFK, Nazi war crimes, Clinton's executive order for 25-year automatic declassification, and the State Department's "Foreign Relations of the United States" publication series.

How does the concept of "historic value" play into the declassification process?

Documents with historic value, by definition, become permanent records of the United States. Typically these kinds of documents surface because of the special declassification projects. The fact is that when you are dealing with historically or politically important things, people will make an effort to be as forthcoming as possible - but it's a slower and more deliberate process where you are making the finest judgments, so as to make it possible for the best redaction job to be done. The minimum will be withheld. It's the difference between doing it fast - and I've got a million pages - or saying, this is really important and I want to do as careful a job as possible.

How specific are the declassification guides?

Declassification guides are very exact documents. They are quite lengthy, and are organized by type of information, for instance "cover". So, if you go to the section on "cover", it might have 20 or 30 entries, which would tell you that this type of information is classified for this length of time at this security level. If you want to know about classifying a particular area of information - cover, human sources, whatever - you would go to the guide and it would tell you specific kinds of things, for instance, the name of an organization providing cover for a CIA officer. The guide tells you the classification level and duration, etc. So the guides are quite specific. Most declassification guides are classified.

But it must be difficult because the information within documents is not always clear-cut. It might be easier to assess potential damage from release of technical information, for example, than from other types of information.

Right. For instance if you had a quote that came from a communications intercept, that's easy - you know the whole paragraph is going to be cut out. That would be very clear. Other information is more difficult. For instance, you are not allowed to take out everything that a source said to you, but you are allowed to protect the identity of the source. Let me give you an example. You have a paragraph, "The case officer met with colonel so-and-so yesterday, such-and-such a date, at the hotel whatever at 7 o'clock in the lobby bar. He was a bit drunk and proceeded to have some more drinks and we discussed the following three things. Paragraph A: his chances for promotion in the army. He said that his buddies so-and-so were promoted. Paragraph B: He discussed his family life and that his wife, the former so-and-so, and their three children were _____. Paragraph C: He discussed rumors in the army about who was responsible for killing American tourists."

OK. Now, when you start the declassification - and I'm being a little bit silly here - the only thing that you know for certain is that you can take out "so-and-so." You can take out his name, because you are protecting the source. But how much more information does one need to withhold to protect the identity of the source? Now, let's go to the silly side of that. OK, he had too much to drink that evening. You probably don't need to take that out. How about "We met at the Hotel Excelsior in the lobby bar?" You probably want to take that out. Then you would look at paragraph B: He was whining about his wife and children. Well, that's not responsive to the request, and it would identify him. When you get to paragraph C, when he was discussing rumors in the military with regard to the American tourists, you're obviously going to be looking at that and thinking about releasing it, because it is at the heart of what is relevant to the request. Now, if it says, "There were rumors in the military..." you might well be able to release that. However, if it said, "He told me that his close buddy X had told him," then you have a more difficult problem and decision about releasing the identity of X. That's the process one goes through. The only thing that is clear-cut is the person's name. Then you have to go through the document sentence by sentence.

Are declassifiers selected or brought in because they have an existing knowledge of what was going on at a particular time in a particular place?

I call declassification a reverse engineering exercise. If you don't understand how the document was compiled, you can't understand how to declassify it. When I was declassifying, I liked to have somebody from the history staff or from the geographical division involved, or else I have to do a lot of research. When requests come in, I don't necessarily know anything about the event. Before you can do redactions, or even begin a meaningful search for documents, you have to know what the request is about. Otherwise you are approaching it in a mechanical, mindless way, and the odds are that your search won't be very productive. If you just take the terms that the requester provided and plug them into your search, you probably won't get anything, because your retrieval system probably doesn't even use the same terms. This gets into the issue of full text search systems and the fact that your request often has to be searched historically through six different systems that have been used over the years. So when you ask me about a particular subject matter, it's not like firing up the PC and going to Google and typing in "El Salvador nuns" and finding everything. The point is that you have to be conversant with the ways that the documents were being created and indexed back then, and how they are retrievable now, as well as documents that have been created in the interim and even today or yesterday. You have to understand that continuum of systems. As you know, even though the current system today might be capturing things in full text, this wasn't the case in 1980 or in 1965. Requests have to be brokered into these different systems, and

you have to create the search - the appropriate search - so you go from full text today, to "key words" yesterday, to file folders from 25 years ago. And even with full text systems, as we continually discover, you are likely to make the request - the death of the nuns in El Salvador - by using names. But there are dozens of other terms that may have been used instead of the nuns and their names. They may have been called "the Mary Knoll sisters"; they may have been called "American church women"; they may have been called "Catholic church women," "Catholic church_women," etc. You can see the problem. That's why it helps to have a historian or someone with historical knowledge.

Could you talk about the physical methods of doing redactions once you have selected documents for declassification?

OK. There are two styles of doing redactions. There's the old-style manual method where you would actually Xerox a page and use a special type of marker - the red El Marko marker - to redact the information and then Xerox it again. You can also use a black grease pencil. It's specific to the Xerox machine. Now we have an electronic system called MORI - Management of Officially Released Information - which images the document as a TIFF file. You basically draw boxes around information and create overlays that can be color-coded, so that one can be yellow and another can be red. Then I can consolidate them. So the system maintains the original TIFF image and the overlay images - which are basically just mapped coordinates. Then we make what we call burned redactions. You actually apply the declassification markings to the burned redactions. We burn these images and in a way it's like burning the classified information right out of the document. Some people used to use Exacto knives to redact. That's just very slow. Then you lay it down on the Xerox machine and copy it. But I would say that the vast majority of people prior to the electronic system just used the red El Marko marker or the black grease pencil. The El Marko was a little bit nicer because if you had to go back you could use Clorox on a Q-Tip to undo it. If you decided you made a mistake, you literally had a bottle of Clorox with a Q-Tip. And it would take it right out.

It is sometimes difficult to discern what the rules are for redaction - why is this information released, but this other information withheld? It can sometimes appear subjective or arbitrary or deceptive.

In any arena you have to have clearly understood rules to make decisions. I mean, whether you are talking about custody or child support, whatever arena you are in, it works best to have well-understood rules for reaching decisions. You don't want to be arbitrary or capricious. So I think that's what you want to protect; you want to prevent giving away a secret by accident. And you can see why. Are you familiar with the term "glomar"? A glomar is a "neither confirm nor deny" answer. It comes from the ship, the Glomar Explorer, whose classified mission was to recover a sunken Soviet submarine in 1974. A glomar is needed when the fact of the existence of records on a given subject is secret. So, it's not so much whether you're looking at whether the record is secret, you're looking at whether the fact as to whether it exists or not is a secret. Imagine if you ask, "Do you have any records showing that X is a CIA asset?" We would answer with a neither confirm nor deny. Your request is denied, pursuant to exemptions one and three. I can neither confirm nor deny whether such records exist. And that's because the fact as to whether a given person is or is not a source is a secret. If, in fact, they are, then their records would also be classified. So, that's why it is important to have well-understood rules: so they can be administered fairly and consistently. Some people from the outside might attribute those to a sort of a knee-jerk mentality that the agency just doesn't want

to go into this. I think it's much more that you want to have well-understood rules that can be applied in a consistent manner and not arbitrarily and capriciously.

So when you respond to requests for documents and you determine that the request merits a neither confirm nor deny answer, do you say, "That's a glomar"?

Yes. You glomar a request by simply the way the response is worded. It doesn't matter whether any records exist or not. So, for instance, if you ask me the CIA budget for the year, I don't glomar that request, I deny that. You know and I know that the budget exists. But if you ask, is a certain person an asset? Then you glomar that - you don't confirm or deny that. You know from the request that it's really irrelevant whether you have any documents or not.

Was there a CIA station in Santiago, for example?

Right. Generally speaking, stations are not acknowledged, though there are exceptions. And again this has to come from the highest levels and for a certain reason. An example might be: The Department of Justice might say, "We are doing a criminal prosecution and we need to have this information declassified for the case." So, in all of these decisions there is a balance that can be made. And that's how you have exceptions to the rule. Essentially, the director has to make that decision. So, now you allude to the point that it's well known. And that's correct, there are plenty of things that are well known, but still have to be officially secret, because the US doesn't want to acknowledge those. In all those cases, would lots of damage ensue if the information were released? Probably not lots of damage... some.

INTERVIEW WITH STEVEN GARFINKEL

Could you state your name and position?

My name is Steven Garfinkel. I've been the director of ISOO (Information Security Oversight Office) since May 1980. Essentially ISOO serves as a bridge between the president, who issues policy on security classification, and the agencies which implement that policy. Our responsibility is to see that the president's policies are being implemented reasonably by federal agencies which create or handle classified information. ISOO, as its kind of silly acronym is, has been an administrative component of the NARA since 1995. Before that it was an administrative component of the OMB, and before that of the GSA. It's an office that, since its creation in 1978, has taken policy guidance from the NSC.

Are there significant reasons why ISOO has been shifted around between these different agencies?

No, but there is a very long history which I can try to synopsise. When the office was first created in 1978, it was a creature of Jimmy Carter's executive order that established the policy for the security classification system. At that time, there was a great downsizing of the White House going on, and so they said, "Well, even though ISOO is going to be performing a function for the president, we're going to find it a home other than in the White House because we're not going to add to the size of the White House." So that established the precedent of having ISOO located somewhere other than where it was getting

its policy direction. They found the GSA, which they thought would be a neutral home - it's the government housecleaning agency and doesn't have anything to do with classification. And then in 1992-93, we got embroiled in - and I don't mind saying this - a pork barrel issue that upset two members of Congress, because we were proposing to issue rules regarding how you actually store classified information that would have created a non-monopoly situation for a company within one of the Congress members' state. It was very silly - it's a great Washington story because only in Washington could something like this happen. Essentially, the member of Congress tried to have ISOO disestablished by not funding us. And then at the last minute of that Congressional budget cycle, they said "OK, we're going to fund you but not within GSA because GSA has no control over you, so we're going to put you in the NSC, which does have control over you." This is very complicated - only in D.C. At that time the NSC was involved in a very heated FOIA case over access to its records and they were arguing in court that they were not an agency. And so if ISOO had been put in the NSC, ISOO - which has agency-like functions - would not have helped their argument that they are not an agency. So without telling the OMB, which is, of course, in charge of the federal budget, the NSC managed behind the scenes to get Congress to put ISOO in OMB. So OMB woke up one day thinking they knew the President's budget and they had this new office in them. That was an extremely difficult situation because they were not happy that somebody had played a trick on them. OMB decided right at the beginning, "Well, this won't do at all. We don't do agency functions either. We're above that and so we need to find you another home." Ultimately they decided on NARA, the hapless victim. We're like a pawn. But the whole time we've been able to function. For one thing, 99% of the time we can function independently of even the NSC because things are going on and they're not that controversial or whatever. There are no policy decisions being made per se. There are times when there are and then we deal with the NSC. So the moving around hasn't affected our policy function, though it has been difficult at times to go from hither and yon.

Your work requires that you negotiate and regulate secrecy. When do you feel secrecy is necessary?

On occasion. I think secrecy is a temporary thing. There are two kinds of secrets in my view. There are real secrets, which are relatively few. These are things you would assume are real secrets, which are new discoveries, new developments, a position you're going to take in terms of diplomatic or military maneuver. Real secrets generally have a life span of really being secret, and it's not forever by any means. Then we also have a lot of secrets that I call protocol secrets. That's my own term for things that are not really secret. Everybody knows that they happen, we just can't admit that they happen. For example, we can't admit that we cooperate with another country in an intelligence operation against a third country. Without talking about the specific intelligence operation, every American assumes that we cooperate with our allies in intelligence matters just as we might in military or diplomatic matters. And there are lots of protocol secrets. They are secret in the sense that they're not admitted and they're not formally true, but everybody assumes they're true and their assumptions are generally pretty correct. Because we have to work with other nations, a lot of these things stay secret, many of them for far too long. And that's the area of declassifying what really isn't secret that I push, and where I feel our office needs to be aggressive, vis-à-vis the CIA, NRO, DoD, the State Department; because they are arguing a valid position and so are we. We take the role that we need to minimize what I call secrecy by protocol rather than by actual confidentiality.

Do you think that secrecy functions not only to safeguard information but also to sustain a power dynamic between those who keep secrets and those from whom secrets are kept?

I don't much believe that the reason we have secrets is merely the power dynamic that people would like to think. I've just seen too many secrets. There was a time when it was kind of cool to have something called a special access program. If you were in the military and you were a general responsible for a special access program that no one else could see, that was a kind of privilege. The Pentagon has reformed this a great deal. But the idea that people are creating national security secrets for non-national security reasons is grossly exaggerated. For example, there is currently a lawsuit going on over documents that were classified in 1917, during World War I, and it's easy to say, "that's ridiculous, this information should no longer be secret." Many people in government would agree it's ridiculous that this material is still secret. Others would disagree and say it's critical for national security. But the point is that when the secret was first created it made a lot of sense. So for people to say our secrecy system is corrupt because we have secrets that are 80 years old is missing the point entirely. There are millions of examples like this and there was a sense behind why these secrets were created.

Can these lingering secrets be accounted for by pointing to bureaucratic inertia?

If this system were not scrutinized constantly, I might say yes. But in the US there's always somebody looking over your shoulder. Secrecy is not trusted. Americans do not like secrets. They assume you are trying to hide something to cover your ass. I would think it is very difficult for somebody to live in a secret world that really is secret.

What is your opinion about the government secrecy reform legislation currently before Congress?

I have to testify about that, and I will testify very positively. It's obviously vastly different legislation from what Senator Moynihan originally proposed, which would have, in effect, substituted a statutory framework in place of the executive order on classification and declassification. The current bill will just create an advisory committee, the Public Interest Declassification Board, with a terrible acronym... PIDB.

CARTOGRAPHY OF EXCESS

Bureau d'études, Multiplicity

By Brian Holmes, March 2002

Utopian ideas - like "Spaceship Earth" - are round, multidimensional, interrelated: their archetypal map is the Milky Way, the infinite constellations. But rational thinking is instrumental, linear, it distorts: and that's exactly the problem with the Mercator map, the most common world projection. Buckminster Fuller, inventor of the geodesic dome, created a "Dymaxion map" to undo those distortions. First the earth becomes a geometric figure, an isocahedron: its 20 triangles are then disjointed and laid flat, so the land masses radiate from a nexus in the north, without splitting continents or enlarging the polar regions. Fuller based his politics on this map: at the '67 World Expo in Montreal, in the dome of

the U.S. pavilion, he wanted to lay out a vast Dymaxion projection, and animate it with the most up-to-date statistics, so visitors could watch the flow of resources across the earth - and identify the patterns, the inequalities, the most wasteful and efficient solutions. Delegations from different regions would meet for cooperative sessions, in a problem-solving process called the "World Peace Game."⁽¹⁾ The idea was simple: radical democracy. "Make the world work, for 100% of humanity, in the shortest possible time, through spontaneous cooperation, without ecological offense or the disadvantage of anyone."⁽²⁾

Gerardus Mercator was a Protestant scholar from Flanders; he published his map in 1569, to help European merchants plot routes to distant shores. The ability to sail in straight lines led to a capitalist world-economy. Oyvind Fahlström was a Swedish artist who spent his childhood in Brazil, and died in the U.S.A. His World Map was painted in 1972, not long after Fuller imagined his utopia. Fahlström's map recalls the Mercator projection: but the oceans have practically disappeared, the continents are crushed or swollen by the political pressures that the world-economy brings. Space overflows with clashes between the wealthy and the downtrodden, the CIA and the freedom fighters, the capitalists, the communists, the revolutionaries. Fahlström was interested in resistance and excess: by which I mean politics plus overflowing subjectivity, figurative invention. For him, a map was a flat, rule-governed space for a strict social game; but it also was an open territory for imaginary play.⁽³⁾ In the early seventies he created a series of Monopoly sets (CIA Monopoly, World Trade Monopoly, Indochina, etc.), where political and economic information provides inflexible rules, whatever our passion, whatever our creativity. Yet a work like his Pentagon Puzzle - including a detail of a square earth, wrapped in chains - could also be taken apart, dispersed, its pieces reinserted into another game.

Fuller's utopia was not accepted for the U.S. pavilion in 1967: at the entryway, officials placed a huge golden eagle. But today, Internet access has brought tremendous information within our reach. Now everyone can play at mapping resources. "The communications aspect of my work can be vastly augmented by the use of computers and by the use of television, video and the miniaturizing trend of cassettes of video communication.... millions of people and multi-billions of dollars are at work in developing just such equipment, personnel and know-how," wrote Fuller in 1970.⁽⁴⁾ Part of Bucky's heritage is "osEarth Inc.," a think-tank and data-base compiler which organizes World Game sessions on a huge Dymaxion map, as a learning experience for youth. However, that experience is also sold to negotiating teams from Fortune 500 corporations. "Global civil society," with all its complicities, is squarely on the map in 2002.

Does anyone doubt that Fahlström's Monopoly paintings, with their focus on political confrontation, come much closer to the games the world really plays? Yet the recent round of counter-summits and global demonstrations still recall Fuller's basic idea, radical democracy. And one begins to wonder: where are the artist-cartographers of today?

POWER LINES

The Paris-based conceptual group, Bureau d'études, works intensively in two dimensions. For a recent exhibition called "Planet of the Apes" they have created integrated wall charts of the ownership ties between transnational organizations, a synoptic view of the world monetary game. Against a black ground, shield-like forms are emblazoned with the names of states, regulatory bodies, think tanks, financial firms and corporations. Texts on privatization and flexibilization are posted among the circuit-like arrays. A few

spots give way to blue zones, humorous and surreal, like word-balloons or psychic oceans: these hold counter-information from autonomous groups, manifestos, constitutions, calls to action...

Instead of a catalogue, the visitor gets three "Wartime Chronicles," single sheets that divide the power players into overlapping regions. One is a finance pole, with pension funds, portfolio managers and banks, plus gray zones of legitimating foundations. Another shows telcoms, media groups, and networks of consumer distribution. So you want to call the police on these criminals? Military institutions, intelligence agencies, weapon makers and satellite companies complete the picture. A few quotes run along the sides of the sheets, like this one from the artist Fabrice Hybert: "My first collector, well, big collector... was a mediator for NATO and the big structures like that, NATO and the African or South American countries, something like that, another one is a mediator for all the arms industries, well, you know, it's horrible but he has this capacity to abstract himself in that scene... Me, I like people like that." (5)

If artists are talking like that, where can you escape? There's a wager here: paint a totalitarian picture, crystal clear, and people will look for the cracks into some other dimension. Another giveaway, the eight-page text called "Potentials," explores "autonomous knowledge/power" - i.e. the deconstruction and unconventional reconstruction of complex machines - with a political analysis of different anarchist positions, as well as maps or figures listing dissident knowledge producers, squats and hacklabs, and a chart that relates various forms of non-capitalist exchange. A non-price (0 euros) and a contractual note figures on each of the sheets: "The present publication cannot be acquired, sold or destroyed. All persons may nonetheless use it as long as they please, with an obligation to give it to others if no longer desired."

This last detail has its importance: as Bruce Sterling recently put it: "Information Wants To Be Worthless" - worthless in monetary terms, that is. (6) And far beyond the computer logic of Open Source, the great alternative project of the last decade has been mapping the transnational space invested primarily by the corporations, and distributing that knowledge for free. This is the real power of "spontaneous cooperation," in a global information project like Indymedia. Across a decade and more, from the early '80s to the mid-90s, the rules of the neoliberal economy were hidden in the back holes of offshore operations. Today, a multitude of projects like "Planet of the Apes" are making them increasingly visible. (7) To the point where a new resistance means that we can start imagining - or exploring - a radically different map of the planet again.

Fuller would have loved the design of the Internet, which makes information sharing possible for the World Game. Fahlström, the admirer of cartoonist Robert Crumb, would have loved the crowd at the Days of Global Action: autonomous and wild, intelligent and quick on their feet. Bureau d'études is in that crowd: by collaborating with squats, jobless people and sans papiers, by operating a self-organizing space in Strasbourg, the "Syndicat Potentiel," and combining it with "Université Tangente," a project for autonomous knowledge production, they have begun quietly broadcasting a pragmatic intransigence to the younger artists on a French art scene, dominated by the likes of Fabrice Hybert. This summer, they will meet the No-Border Network in attempts to subvert one of the strongest power-lines: the Schengen Information System. Activities like those simply can't appear on the walls of the art world. In this sense, half the work of Bureau d'études remains underground: the refusals and denunciations are clear, the cooperation and subjective play remains almost invisible. And maybe it's better that way: how could you successfully represent an alternative, radically democratic experience?

UNCERTAIN USES

A sophisticated mapping project has tried to answer just that question. The screen before you shows a purple-black mass, spangled with mesmerizing constellations: slowly you realize it's a night-photo of urbanized Europe, with white rectangles marking zones of potential activity. The scene breaks: music plays, letters dance and roll, spelling out words; and you begin to wander within a matrix of slightly elevated, freestanding screens. You find yourself surrounded by distinct sets of imposing, static black-and-white images of architectural arrays; then snapshot color pics of people mingling freely in a everyday scenes; then sustained interviews in black-and-white with huge talking heads; then lyrical video strolls through some personal warp in the urban terrain. Stop in front of one screen, and a specific, localized story unfolds: architectural setting, actors, individual story, subjective path through the city. Until the scene breaks, the language rolls, the music plays, and the permutations begin differently again. On the fringes of the art world, a group of urbanists has created one of the most impressive systems of visual representation to appear in recent years: USE, or the "Uncertain States of Europe," a project by Stefano Boeri and Multiplicity.

Multiplicity is a networked research team, exploring the European territory as it changes, in twenty-six different sites from Athens to Espoo, from Porto to Bucharest or Moscow. The basic premise is that borders are ungraspable, that architectural programs and urban limits are unstable - but everywhere, the subjective excess of "autopoetic innovations" creates recognizable patterns of change, at least for the observer who mingles with them. For Boeri, whose aim is to deconstruct an outdated urban planner's gaze, what we are seeing is "the triumph of the multitude": consistently mutating but thoroughly unpredictable patterns of self-organization, niching in built environments that have increasingly lost their predetermined function. Thus one of the sequences (keyword: *détournement*) recounts how the uses of the Chinese community have completely transformed the ideal program of a huge modern housing slab in the 13th district of Paris. Another (keyword: *eruption*) deals with the careful organization of chaotic raves, "nomadic flames": "The paths of the millions of ravers and tribes that invade Europe's streets every weekend bring us ever further away from a precise, functional destination." (8)

The reference to the multitude in Boeri's text, and indeed, on the screens of USE, recalls the political thinking of Italian Autonomia, with their central theme of "exodus," or conscious withdrawal from modernist planning and salaried labor. Obviously it's a dilemma for the traditional urbanist, or for any politician wanting to exercise control: "Escaping this condition of powerlessness simply implies accepting the ungovernability of a great deal of the contemporary territory," writes Boeri. This in its turn would mean, "learning to act in a context directed by different, highly variable subjects." (9) Or in what I'd call a situation of radical democracy.

But the big question that remains is how to use an installation like USE, and how to use the operational model of a networked, collaborative research group like Multiplicity. The exhibition device itself, elaborated outside the typical gallery-museum circuit, is the best installation I've yet seen on interactive social process: with its extensive matrix of screens, it opens up a real-and-imaginary territory, a multidimensional, interrelated world of subjective freedoms. But to what extent is it effectively political? "To resist is not to be against, any more, but to singularize," writes Suely Rolnik, reflecting on the changing meanings of artistic practice since the Great Refusal of the 1960s. "All and any acts of

resistance are acts of creation and not acts of negation."

Beautifully said - but I'm not certain. The great theoretical swing of the past three decades, from critical negation to use value and subversive affirmation, has left "progressive" practices wide open to every complicity. Despite the autopoietic processes that an installation like USE so brilliantly lets us see, the entire planet - Spaceship Earth - is prey to a resurgence of repressive authority, within the perfectly legible game of the capitalist world-economy. Berlusconi's Italy, where the project has been shown, is hardly an exception: and yet it is also one of the laboratories for new forms of political mobilization. Can we imagine artistic representations of self-organizing processes, in open confrontation with the economic game? "Rules oppose and derail subjectivity, loosen the imprinted circuits of the individual," wrote Oyvind Fahlström. Only then does a deeper territory emerge, a more complex interplay: power lines/radical democracy.

NOTES

This text was originally published in German in the journal *Springerin*, Vienna, March 2002.

(1) "The common assumption of ultimate war by the major political powers of our planet brought about the development of World WAR Gaming Science by the great powers' respective military strategists. World War Gaming Science involved all terrestrial resources. My World PEACE Gaming Science changes the basic assumption of fundamental inadequacy of total life support and applies total capability toward the success of all humans." Buckminster Fuller, "Preamble and Memorandum to those interested in playing World Game," in *The World Game: Integrative Resource Planning Tool* (Carbondale, Ill.: Southern Illinois University, typescript, 1971), p. 2, available at: <www.bfi.org/worlddesign/WG1_Title.pdf>. Fuller is, of course, the coiner of the expression "Spaceship Earth."

(2) Quoted in Medard Gabel, "Buckminster Fuller and the Game of the World," at <www.worldgame.org/info/fuller.shtml>. Thanks to Hubert Salden for putting me on this track.

(3) I use Suely Rolnik's distinction between "playing-the-game" and "just-playing," in "Oyvind Fahlström's Changing Maps," exhib. cat. Oyvind Fahlström: Another Space for Painting, MACBA, Barcelona, 2001.

(4) Buckminster Fuller, "Preamble and Memorandum," op. cit., p. 6.

(5) Interview on May 2, 1996, with Fabrice Hybert, artist representing France at the Venice Biennial, in Bureau d'études, *Chroniques de guerre 2*, brochure, February 2002.

(6) Bruce Sterling, "Information Wants To Be Worthless," distributed free over Nettime, March 6, 2002, archive at <<http://nettime.org>>; let me recall that one of the richest Nettime threads over the years has concerned "the high-tech gift economy."

(7) Mark Lombardi's sketch diagrams and index cards on banking scandals, or the website "TheyRule" by Josh On and Futurefarmers (www.theyrule.net), are close to the recent projects by Bureau d'études. "TheyRule" introduces a DIY side to corporate tracking: users can build up diagrams of a single CEO's participation in interlocking corporate boards. However, neither project has the synoptic ambitions of Bureau d'études.

(8) Paolo Vari, "USE.04 Raves," in exhib. cat. *Mutations*, arc en rêve centre d'architecture, Bordeaux, 2000.

(9) Stefano Boeri, "Notes for a Research Program," in *Mutations*, op. cit.

(10) Suely Rolnik, "Oyvind Fahlström's Changing Maps," op. cit.

WEBSITES

Bureau d'études:

<http://utangente.free.fr> (includes maps)

<http://syndicatpotentiel.free.fr>

<http://bureaudetudes.free.fr>

Multiplicity:

<http://www.multiplicity.it>

http://www.classic.archined.nl/extra/archi_tv/tv3/eng/hoofdframe1.html

THE SHARED FOOTAGE GROUP

By Gurbal Singh, August 2003

Like most of this collective effort, even the name is not a single person's brainchild- all we know is that somewhere along the way, people started referring to our work as such. And since it was an unpretentious, practical term, which did represent what we were doing in a direct manner, we just stuck by it.

The beginning of this effort was quite small. In the Indian state of Gujarat, in a place called Godhra, on the morning of 27th February 2002, some people set a railway train compartment alight. Unfortunately, the reasons for this event cannot be described in this short note. From the first of March, within Gujarat started a genocide, where the minority Muslim community was targeted openly- the administrative machinery was inert in some cases, and totally in collusion with the miscreants most of the time. Many of us, outraged, read about this and saw it on television.

The violence continued unabated for months. All sensitive people in the country were appalled, and struggled to formulate responses to the events.

In the month of May, a few of us, film practitioners of varying specialisations, decided to go to Ahmedabad in Gujarat to look at the situation for ourselves, and to see if a secular, sensitive, politicised cinematic response was possible. It was supposed to be a trip of eight days- but on reaching there, we realised the need to stay longer and attempt to do something more substantial. We never knew for sure how long we would stay, but took decisions as the need for them came along.

We shot a little with the equipment we had taken along, and after that, a lot of rethinking, strategising, formulating, discussion took place. The end result was the decision to sustain the effort (consisting of documentation on video) for some time. This meant we needed resources. Appeals were sent by email, phone calls were made, letters were sent- this is how it transformed into a larger effort than initially conceived of, and became a collective. The idea of a collective documentation- collecting footage and creating an archive of it, which would be made available to people free of cost, this emerged out of the discussions. We knew we did not want it to be funded by any institution- that stand was taken at the beginning, and continues till date. Donations from individuals started coming in, offers of equipment, consumables, facilities, time. Some preliminary general shooting was done. Then, when it started looking like we would be there for a while, focus was brought into the work- what would be covered and what would be left out. We set up workplace-cum-living space for all directly involved with the

effort. Volunteers started coming in from different regions, with varying skills and time- we put together plans to have productive collaborations with all of them. Many things happened, and we kept on at it, shooting what we could, with what was available at the time- in terms of equipment, energy and time. We also tried to collect amateur records- photographs, articles, video footage etc. Alongside, we also evolved ways and methods of organising the material to make it accessible to anyone who wanted to use it.

The shooting went on till February 2003. The organisation of the material continues till date. We had 45 people who came personally to Ahmedabad and contributed their time and effort, scores sent equipment and money. We have about 250 hours of material, shot on various formats, mainly DV and hi-8. Some people have used the material in their films, three short films have been made exclusively from the material. Once the material is fully organised, we intend to spread it around- throw it open for people to make films out of them- of various kinds, films which speak about the events, reasons and perspectives. We also intend this material to be a part of various archives, to increase accessibility. The Shared Footage Group is not a project or an organisation- it has been a collective- different people at different times have contributed in different capacities. It does not have a clear beginning, and definitely not an end. We continue to be involved in it as long as necessary. Most importantly, the Shared Footage work is not a meaningless, purely academic or cinematic activity, undertaken for the personal gain of the people involved in the work, but a creative, political response to a certain event, towards a vision of a more human, just and peaceful world.

HUMAN RIGHTS, TESTIMONY, AND TRANSNATIONAL PUBLICITY

By Meg McLagan, August 2003

INTRODUCTION

In the period between the end of the cold war in 1989 and the events of September 11, 2001, human rights became the dominant moral narrative by which world politics was organized. Inspired by the momentous political and cultural transformations taking place at the time, from the fall of the Berlin Wall to the spread of global communications technologies, promoters of human rights discourse optimistically predicted that a transnational public sphere dedicated to democratic values would emerge (We now know, of course, that such predictions were wrong, as early post cold war hopes gave way to the harsh realities of contemporary globalization).

In order to help create the transnational public sphere they envisioned, international human rights activists deployed a number of strategies, among them the production and circulation of testimonies by victims of rights abuses. Testimonies are first person narratives in which an individual's account of bodily suffering at the hands of oppressive governments or other agents come to stand for the oppression of a group. Rooted in dual Christian notions of witnessing and the body as the vehicle of suffering, testimony is a deeply persuasive cultural form that animates and moves western sensibilities. Although testimony has long played an important part in rights advocacy (dating back to abolitionism), its use grew in the 1990s and testimonies proliferated in multiple genres and arenas, from written texts to film and video documentaries to "live" performances/face-to-face encounters in activist meetings, NGO forums and governmental hearings. My

essay explores this phenomenon, focusing on the role of several mediated forms of testimony, e.g. "cine testimonials" (testimony on film/video) and testimony online, in activist attempts to construct a transnational public.

While media are recognized as being critical to the general diffusion of human rights norms and values, especially in the post-WWII period, relatively little scholarly work exists that adequately addresses their role in the making of contemporary human rights claims. This neglect can be attributed to two things: first, a tendency to treat human rights as "something out there" waiting to be realized legally or philosophically rather than as a flexible and expansive category through which politico-ethical claims are made and socio-political transitions are accomplished; and second, a tendency to overlook the fact that media are not merely conduits for social forces, or expressive of social realities, but possess a logic and power that is itself constitutive of thought, identity, and action. One implicit aim of this essay therefore is to counter rights legalism by demonstrating the centrality of media (and cultural production) to the human rights movement. To render something public once meant submitting it to the critical judgment of others; in recent years publicity has gained new meanings, the result of a "bewildering array of spatial and technical mediations" making something public. As Rajagopal notes, "the effect of the means and modes of reproduction, whether analog or digital, electronic or mechanical, and the space of an event, whether in a shopping mall, a crowd, a city square, or for that matter, in a broadcast image or a website, all shape the experience of publicity in significant and different ways. The kinds of visibility a public event has are not secondary to its being public; rather, they condition the forms of publicity mobilized." The taxonomy of testimony proposed in this essay underscores Rajagopal's observation that analysis of public texts, events, and practices must be form-sensitive. Testimony can work through the enumeration of facts as well as through emotionally laden narratives of suffering; each entails a different kind of signification. Although human rights activists often deploy both kinds simultaneously, the larger point is that testimony is not a transparent genre or practice, as the following discussion of its mediation in various forms demonstrates.

Analysis of the relation between human rights testimonies and transnational publicity thus involves bringing aesthetic questions about formal semiotic properties and generic conventions to bear on considerations about how testimonies generate action outside the textual event itself. In this essay I argue that human rights testimonies can be understood as a form of political communication, as a means through which ethical arguments or claims are made and collectivities are hailed and potentially persuaded and mobilized.

TESTIMONY AS DOCUMENTARY EVIDENCE

The discovery and representation of information on human rights abuses through specific forms of realism is central to most human rights work. Indeed, human rights activists and organizations are first and foremost "collectors, filterers, translators, and presenters of information regarding human rights violations" (Keck and Sikkink 1998: 3). The underlying assumption is that the circulation of such information generates political action, whether it be through direct pressure on governments or corporations to change their policies, or through the mobilization of individuals on a grassroots level. Although the naive epistemology about exposure and revelation upon which this belief is based has been challenged in recent years by situations in which knowledge has actually failed to produce action, most notably the war in Bosnia and the genocide in Rwanda in 1994, it

nevertheless remains a guiding principle of traditional human rights politics.

In the early years of Amnesty International USA (AIUSA), activists devoted a huge amount of their energy to gathering specific data about violations which they analyzed according to human rights principles and put in the form of written reports. These "thick rivers of fact" were circulated to governments and the press as evidence of their claims (Cmiel 1999). Activists' reliance on "documentary rhetoric" (Hesford and Kozol in press) - realist forms of representation and conventions of documentation - presents a problem in that abuses are never clear-cut; there are always contradictions between human rights classifications of violence and how violence actually plays out on the ground. In order to manage the instability of the category upon which their claims are made, human rights activists formulate their reports using abstract universal discourses, and a particular style of journalistic realism. In his writing on human rights reports, Richard Wilson notes that the genre presents information as if it is simply factual and transparent; claims are supported with numerous references to how sources are checked, to international human rights standards, and to previous reports. By presenting their findings in this way, NGOs are able to appear credible (and their information objective) and in so doing to "cultivate a veneer of independence and impartiality in the international arena, which helps legitimize their assertions about the need for human rights norms."

In recent years this orthodox insistence upon memory, revelation, and documentation has started to come under considerable pressure especially in the context of truth commissions, which some have argued enable a process of forgetting - rather than preventing them from forgetting-- crimes against humanity and human rights violations. This strand of research questions the relationship between witnessing, publicity, and collective remembrance, asking whether the more we know the more we actually forget.

Seeing is Believing: Handicams, Human Rights, and the News (2002), a documentary film directed by Katerina Cizek and Peter Winotick, is an instructive look at the role of digital video in documenting human rights abuses around the world. Filipino sociologist Alex Magno sets up the broader framework of the piece with his observation that video cameras are simply the latest in a long line of new communications technologies or "small media" that have played a critical part in various political revolutions around the world, from audio cassettes in Iran in 1979 to faxes in Tiananmen Square in 1989 to email and text messaging in the Philippines in 2002.

Gillian Caldwell, director of the New York-based human rights media organization WITNESS, elaborates on Magno's point, underscoring the importance of video images gathered by activists as visual evidence of human rights violations. Drama is provided by the story of a Filipino activist named Joey who works closely with a group of indigenous people in the Philippines known as the "Nakamata Coalition". We first see Joey training members of the coalition to document their struggles with local plantation owners over land in Mindanao, and then we see Coalition members take the camera out by themselves in order to document a meeting with outside officials. This practice of documenting oral transactions on video has emerged as an important one for indigenous people who view such transactions as contractually binding within their own societies. By videotaping discussions about land claims, for instance, non-literate activists have recourse to video records when agreements between parties break down.

Soon after the Coalition training process finishes, violence breaks out and the camera, provided by WITNESS, is there to record it all.

At the heart of this film is a theory of truth and transparency that is premised on two things: (1) the authenticity of experience (I was there, I witnessed it, therefore it is true) and (2) a commitment to the gathering and display of visible evidence. Yet as countless writers on documentary photography and film point out, the truth status of moving images has always depended on critical contextualization. Images do not accomplish meaning without framing, a point perhaps most starkly illustrated by the various readings of the Rodney King video footage elicited by the prosecution and the defense during the trials. Ilan Ziv's documentary *Consuming Hunger* (1988) further underscores the need for contextual information in order to educate audiences about what they are actually seeing. Although the transparency attributed to video evidence parallels that attributed to legalistic realist forms such as written human rights reports, human rights testimonials on film, or "cine testimonials" can be distinguished by the use of explicit framing devices that supplement images with specifically targeted information aimed at provoking change.

TESTIMONY, AFFECT, AND ETHICAL ARGUMENT

In a recent book, Neta Crawford (2002) explores the consequential role of argument in world politics. Her theory of argument focuses on place of ethical arguments in fostering changes in long-standing practices of oppression such as colonialism, slavery, and forced labor:

"Ethical arguments concern how to act in a particular situation so as to be doing good, assuming that the good has been defined through cultural consensus or meta-argument." (Crawford 2002: 24)

They operate through an assertion that an "existing normative belief or moral conviction ought to be applied in a particular situation." (Crawford *ibid.*) She points out that assertions that slavery was not "natural" and against Christian principles, for instance, were persuasive because they were emotionally appealing--they played on and resonated with audiences' underlying ethical and moral beliefs.

The use of testimony by abolitionists can be seen as an early precursor of the use of testimony by human rights activists in the post-WWII era.⁹ Like slave narratives, human rights testimonies are important vehicles through which ethical arguments are made. They use symbols, images, and accounts of individual experiences of suffering in such a way as to affectively engage and persuade their audiences of a cause's moral worth.

Testimony is premised on the belief that pain is universal, that it crosses all boundaries. This belief in the universality of pain and its effectiveness as a tool for creating solidarity is underscored by researchers who have found that torture is the easiest human rights issue to campaign around (Cohen 2001, 1996). Essentially testimony functions as a medium through which identification with a suffering "other" can take place. Through our identification, we become connected to a political project and can be moved to action. Alison Brysk writes that "a message can foment change by creating an alternative reality, transferring daily experience to a different realm in which it is valued and thus opening the recipient to consider a new social order." (1995:560). In this sense human rights testimonies are performative - they make ethical claims on viewers and listeners and cultivate potential ethical actors in the global arena.

This observation is perhaps best exemplified by a recent video, *Testimony: Annie Lennox in Conversation with Palden Gyatso* (1998). Produced and directed by Annie Lennox, the well-known Scottish singer from the Eurythmics, the video documents the testimony of Palden Gyatso, a monk from Tibet who after the Chinese takeover in 1959. A large portion of the half hour program is devoted to Gyatso's tale of his arrest and mistreatment by Chinese authorities over the years, including torture with an electric cattle prod that, ironically, is made in Britain. At one point Gyatso pulls out several torture instruments which he brought out with him from Tibet (we never learn how the monk manages that). He leans forward and demonstrates to Lennox the way the thumb cuffs work. Lennox, for her part, leans forward too, watching and listening attentively to Gyatso. In this moment, we see how testimony functions as a kind of intercultural technology, bringing individuals together from different worlds through the medium of pain.

Testimonial documentaries thus work on an affective level by exposing audiences to stories of pain with which we cannot help but identify on the basis of our shared humanity. They also work on another level of signification, one that reinforces the first. As "a discourse about the world" as Nichols puts it, documentaries show us situations and events "that are recognizably part of a realm of shared experience, the historical world as we know and encounter it, or as we believe others to encounter it" (1991:x). Our experience of documentary "can be a force unto itself and move us beyond itself, toward that historical arena of which it is part" (1991:xvi). In other words, our engagement with documentary can extend "beyond the moment of viewing into social praxis itself" (Nichols 1991:x). How is this effect achieved? The answer begins with the exceptionality of documentary's referentiality and the materiality of the indexical bond that exists between the photographic image and the object in the historical world to which it refers. What we see on film can seem "to bear indexical links to another world with autonomy and specificity of its own," although as the Rodney King video proves, even "raw" video footage doesn't guarantee a particular meaning. This creates a sense of awe which makes it easy to forget we are dealing with a sign system rather than a direct, unmediated duplication of reality. The result, he suggests, is a constant oscillation between the duplication of reality and the reality of the duplication. The tendency to forget that the filmic reality remains a construct, an approximation and re-presentation of a pro-filmic reality to which we do not gain truly direct, unimpeded access, however, is what gives viewers of realist documentaries such pleasure: For the time being their knowledge of this fact is suspended and they can surrender themselves to the immediacy of the reality onscreen.

Much has been written about this attribute of "resemblance" in the documentary aesthetic. There is a strand of documentary theory that has tried to recuperate realist film in recent years by making an argument for the politicizing potential of documentary based on its "aesthetics of similarity" (Feldman 1996). Gaines, for example, uses the term "political mimesis" (1990:90) to describe the process whereby a sensuous link is formed between bodies represented on screen and bodies in the audience. Here she is building on the work of film theorist Linda Williams (1994) who writes about film genres that "make the body do things" through a kind of involuntary mimicry of emotion or sensation of the body on screen, e.g. "horror films make us scream, melodrama makes us cry, and porn films make us come" (cited in Gaines 1999:90). According to Gaines, realist political documentaries work by performing a mimesis, that is they produce emotion in the spectator in and through conventionalized imagery of struggle. Through an indexical identification with characters on screen, spectators, then, are "poised to intervene." As she is careful to point out, however, shared cultural and historical values, and not the indexical image alone, are what lead to viewers' sympathetic action. In other words,

political mimesis is possible because an audience shares the same set of political, historical, cultural forces. Realism, then, is a device that, through the process of political mimesis, acts on a politicized audience, extending the community of activists.

I suggest that human rights testimonies on film and video achieve their representational efficacy through the same process of political mimesis described by Gaines. By producing and circulating these texts, activists explicitly seek to create moral spaces through which processes of political mimesis can occur, and sympathy can be evoked and performed (Nichols 1994:13). It is in this sense that a transnational "witnessing public" around human rights trauma is constituted through testimony (McLagan 2003).

TRANSNATIONAL PUBLICS AND THE BRANDING OF HUMAN RIGHTS

The global spread of electronic and new digital technologies over the last two decades has transformed the ways in which social movements organize their relationship to publicity (see McLagan 2002). Human rights activists have been in the forefront of the creation of a new kind of media activism, one that not only makes sophisticated and innovative use of techniques of celebrity and publicity through a wide range of forms, including older analog media such as print, photography, and film, and new digital media such as the Internet, CD-ROMs and handheld video cameras, but that also involves the creation of new organizational structures that provide a kind of scaffolding for the production and distribution of these media. Indeed, a whole new arena of social practice has emerged around human rights media, from organizations that provide media training to activists such as WITNESS, www.spinproject.org, and Digital Freedom Network, to those that provide outlets for distribution such as the International Human Rights Watch Film Festival, and mediarights.org. These organizations help activists channel their media to their intended audiences, whether in classrooms, on home video, in movie theaters, on the Web, or in governmental (e.g. U.S. Congress), intergovernmental (the United Nations), and non-governmental forums. In providing the means for the production and distribution of human rights media, these new organizational forms are contributing to the creation of a new circulatory matrix or platform through which testimonies can summon witnessing publics.

This aspect of the human rights movement builds on a long history of pioneering work by Amnesty International, which was the first group to attempt to "brand" their organization through the creation of a logo in the 1970s. The explosion of rights-oriented digital media in the second half of the 1990s represents an expansion of this kind of image politics, with human rights activists self-consciously deploying complex rhetorical strategies borrowed from advertising.

Before the creation of the World Wide Web, political activists used the internet to connect to each other via email, newsgroups, and chat rooms; the "virtual politics" (see McLagan 1996) carried out online was a largely logocentric affair. Since that time, as it has become faster, easier, and cheaper to send visual data electronically, there has been a seismic shift in political use of networked computers. Today activists of all stripes recognize the necessity of having a presence online - well-designed websites are now assumed to be key "portals" of entry into activism, especially by members of the younger generation who take the existence of the technology for granted. In the case of human rights websites, increasingly we find information and testimonies presented not in gritty realist documentary style, but embedded in such things as flash graphics and

sometimes even supplemented by downloadable audio files in MP3 format - strategies which pivot not on emotional identification like that discussed above but rather on different forms of signification.

The significance of this shift in relation to age and generation was brought home to me in my teaching recently when I asked students in an undergraduate class on human rights to pick out their favorite rights websites. I was interested in what students thought about how the sites were organized and the aesthetic strategies that were used, as well as what conclusions they might draw about their potential efficacy as tools to promote human rights. One of sites we explored together was www.stoptorture.org, a project of Amnesty International. On the bottom of the screen were the words "click here to stamp out torture." Absurd as the proposition that one could simply click and stop such a practice might appear to me, none of my students appeared to question the claims of sites promising visitors this kind of "fast and easy activism." The point was underscored when we looked at the site (www.mirrorimage.ai.org) of a local Amnesty International group based in the Boston/Cambridge area called Group 133 which was responsible for organizing a campaign to free fourteen Tibetan nuns imprisoned by the Chinese for demanding their homeland's independence. Group 133 launched www.drapchi14.org in December 2001. I had been interested in the site initially after reading something about the site's innovative use of MP3 files. While in prison, the fourteen young women managed to secretly make a tape recording of songs calling for Tibetan independence; the tape was smuggled out of Drapchi prison and eventually it landed on the desk of Robbie Barnett, founder(11) of Tibet Information Network, in London. After removing the names of the women on the tape in order to protect their identities, Barnett made the tape available to human rights groups interested in the nuns' situation, including Group 133.

Drawing on Amnesty International's prisoners of conscience model, Group 133's Drapchi 14 campaign was designed to publicize the situation of the nuns and in so doing, to win their release. In an interview, one of the group's organizers, Carl Williams, adopted a marketing metaphor to describe what they were doing: "If you want to use the marketing term 'branding' ... to get a person's name out there makes it much more difficult to torture or kill that person," Williams told the Globe reporter (Cox 2002).

Williams' comment about branding prisoners of conscience raises an interesting set of issues that are worth spelling out briefly. First, what does it mean for human rights advocates to articulate their politics using a commercial idiom? Like the subjects of countless human rights documentaries, the individuals represented on the drapchi14 site are victims whose stories of suffering are meant to provoke our identification and to stimulate political action. Yet the way in which they are represented, through the techniques of celebrity and advertising, transforms their meaning. Or does it? Could it be that there are different ways of interpreting or decoding the relation between the form and the content, such that what strikes one generation as the "aestheticization of politics" strikes another as a new way to reconcile political goals and capitalist aims through a pervasive and influential medium? For those who have grown up in the post-1970s era, one marked by growing presence of social marketing, is it simply a take for granted mode of political communication? Do teenagers and twentysomethings simply possess a different aesthetic, as Lev Manovich suggests in his writing on the use of Flash software in web design, than that of previous generations who located gritty politics in realist representation? Indeed, can we map the continuing evolution of technological and aesthetic strategies and the consequent production of new political forms in terms of generational shifts?

More work needs to be done on the link between the emergence of new commercial venues in which human rights testimonies circulate, e.g. in advertisements such as those for Benetton, on MTV, and their forms of signification. Clearly encountering testimonies in such contexts challenges our sense of where such material belongs, e.g. in the so-called rational public sphere where citizens deliberate political issues. The question is how and whether deeply moral and politically contested issues can be meaningfully expressed in commercial culture using commercial language. Given that it is our language, how do we effectively suffuse it with meanings that resist the rhetoric of advertising, which is designed specifically not to tell the truth, or to convey complex or contradictory ideas? Does the option to "click here" merely position us as consumers who are choosing between predetermined possibilities online or is it a meaningful way of taking "action"?

A second issue that is linked to the idea of branding victims of human rights abuses is that of efficacy. In a chapter of *No Logo*, Naomi Klein (1999) examines some of the limits and contradictions of what she calls "brand-based politics" by which she means anti-globalization activism that focuses on individual companies such as Nike, Shell, McDonalds, or Starbucks. Klein notes that although targeting popular brand corporations has been successful, these sorts of campaigns can have unintended and contradictory consequences (e.g. with companies often spending more time and money on publicity than on internal reform, or people feeling they must consume more ethically, and not do much else). Similarly, by focusing a campaign on individual sufferers of human rights abuses who have been "branded" in a certain way on these sites, activists run the risk of freeing certain people but not necessarily achieving the long term effect they desire--forcing governments to change their practices. For example, in recent years China has released several of the most well known Drapchi prisoners on condition that they leave the country. This is part of a much broader Chinese policy toward dissidents which enables the government to quiet western criticism of its poor human rights record without actually having to make major changes. Once the individuals are released, pressure is usually relieved on the PRC and attention focused elsewhere. Thus although activists are always extremely happy to be able to secure the freedom of individual dissidents, there are clear limits on deploying publicity in this manner.

CONCLUSION

In my introduction, I noted that human rights activists often deploy various genres of testimony simultaneously, each of which circulates in particular arenas, reaching particular audiences. I want to conclude by suggesting we think about this practice in terms of activists' use of different "registers" to construct political issues. These registers feed off and at times clash with each other in interesting and productive ways. For instance, logocentric and realist forms of documentary evidence and testimony continue to play a fundamental role in the work done by human rights lawyers; they remain powerfully persuasive to U.S. Congressional committees, international legal bodies, and nongovernmental organizations that seek to influence policy rather than mass audiences. Human rights documentary film and video, though they rely on a similar concept of visible evidence, are visual media and as such have a capacity to generate emotion in audiences through the use of evocative storytelling and affective imagery. Activists use this form to mobilize new publics around individuals who function as "nodal points" in a transnational network of identification and solidarity (Nelson 2001:305). Through victims' onscreen narratives or testimonies, witnesses are situated as potential ethical actors that might intervene in

the situation that produced the suffering which is on display.

Finally, we know that new media refashion prior media forms such as writing, film, and photography, and that this process of "remediation" (Bolter and Grusin 1999) upends old ideas about subjects and participants, producers and texts that underpin theories about how media work. So, for instance, if we look at human rights websites we find that instead of occupying just one position, we occupy multiple shifting positions (e.g. as voyeurs, as consumers, as activists). How does this multiple positioning square with the argument made above that human rights media offer one subject position, that of witness with ethical responsibility? Understanding the ways in which digital activism might reshape the possible horizon of identities and actions that can be produced is critical to making sense of the new arenas of practice and publicity that are emerging around human rights.

NOTE

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DEEP LOCAL

“For the purpose of funders we affirm we are eastern Europeans, and we play upon the transition discourse to get money to become part of a larger international community. For the most part, I would suspect it's not the international community the funders intend (with its neoliberal agenda and its language of rights and democratization), but another global network, which is very critical of it. As good parasites, we have learned to become recognizable to each other, while remaining hidden to the host(s). Sometimes part of the problem is that we become so deeply involved in this global discourse (for instance, open source, or the evils of intellectual property) that we seem quite foreign to the local context and concerns. I'm sure this story is true to different degrees depending on which 10 people in this panel we're talking about, but probably everyone would recognize an element of truth in it".

- Joanne Richardson (from the N5M4 editorial list) -

Globalisation is renowned for its de-localising effects, as transnational business and policies erode local cultures and harness them for their own ends. But, far from extinguishing locality, globalisation as a process also invites the creation of new kinds of localness. In this process of producing new localities the global is constantly being reformulated as a summary of singular new localities. The spread of telecenters and urban digital culture projects are forceful examples of recent experiments in trans-locality. On the one hand, the adaptation of digital and other media to local contexts serve urgent needs: here it is decided among others who will and will not participate in digital cultures and in what ways. But these projects also provide opportunities to unearth fixed assumptions, and propose forms of situated activism and embedded innovation, as opposed to lab-based forms of "research and development".

Part of the aim of the TML process was to go "deep-local", to those places where the involvement of media makers in a local environment passes beyond a temporary presence and becomes a long-term commitment. In this section we wish to devote attention

to initiatives demonstrating how deep local commitment can go hand in hand with translocal connections - in ways that reconfigure modernity and that take greater responsibility for local environments and communities. These initiatives generally operate in complicated social environments, most often inhabited by an economically deprived and marginalised constituency, but where surprisingly strong and highly unique centres of media culture have emerged. What is the story behind these initiatives that provide a platform for these voices at the edge? What is their model of success?

THE 'ART' OF DISAPPEARING

By Frank (Vrije Keyser TV)

There is no place in the Netherlands for the odd one out. Strangers can be assimilated or deported and sick people can be cured or euthanised, but the dreamer and the bohemian will not fit in a straight-jacket. There are only paved roads to follow in this country and those who cannot or will not follow these roads are doomed. Sooner or later that odd one out will be given a choice: either he will lay hands on himself or he will be lend a hand with his choice. After that he can rot in his grave until after long the time is ripe to memorise his peculiarity at a strictly limited occasion.

It appears that the alternative media culture that Amsterdam has known until now cannot be normalized. On the one hand this culture doesn't want to be encapsulated in a public organisation, and on the other hand it is impossible to engage in the collection of enough money to pass as a commercial organisation. Those are the only two options for the existence of media in the Netherlands: public and commercial.

The first victims have already fallen amongst the local radio's. Radio 100 lost its FM frequency after a commercial radio station at an auction of FM allocations, organised by the government, bought the frequency which was used by one of the radio channels of the public broadcast service Salto. The Salto channel was assigned another frequency: that of Radio 100. Squatter's radio Vrije Keyser was confronted with the new public and heavily subsidised radio station FunX, which was given Vrije Keyser's frequency. Both alternative radio stations had to postpone their broadcasts and can only restart when and if, after the sale of as many FM frequencies to commercial parties as possible, a forgotten frequency can be found. True, an organisation sympathetic to Radio 100 has tried to bid for a frequency at the auction, but that scheme failed and the organisation was afterwards fined 4500 euro for supporting an illegal radio station.

Also the producers of local television programmes should be concerned. Their shows are usually being broadcast on A1, one of the two open access channels run by Salto. The financial aid that Salto hands out for the production of these shows has been decreased, but at the same time the technical requirements were raised. The Amsterdam Programming Council, which acts as an adviser to the city council, has decided that the A1 channel is no longer a 'must carry' channel that cable company New-UPC has to provide on the Amsterdam cable network. Therefore it is very likely that, once the government issues a broadcast license to a new commercial or public TV station, A1 will have to make way and will vanish off the cable.

This is the way in which the radio and TV broadcasts that tactical media fans love so

much in Amsterdam are disappearing, or are in danger of disappearing. Or, as happens to the odd ones in the Netherlands: they are being disappeared.

ISLAM AND TACTICAL MEDIA IN AMSTERDAM

By David Garcia, August 2002

If tactical media were to ever attain its objectives it would immediately become redundant as a separate category. In that moment we would all become media, equally unwilling to allow experts and media professionals to control (or monopolize) public discourse. September 11th had this precise effect, rendering (albeit momentarily) the term tactical media redundant. In the minutes and hours that followed the attack the aspiration of generations of media activists were (at terrible cost) made flesh. Everyone of us, from those at the fiery heart of events grabbing mobile phones, to the "universal eyewitnesses" scrambling to make contact with others, attempting to make sense of a world turned upside down, became transmitter as well as receiver. Everyone I have spoken to reached for a phone. In an almost universal reaction to the mainstream media's floundering commentaries and manifest inadequacies we all became nodes in the global media network. And America together with the rest of us who, until that moment, believed we were the lucky ones who inhabited the 'zones of safety', were brought face to face with new realities both outside and within our imagined and geographic borders.

"Tactical media's mobility connects it to a wider movement of migrant culture, espoused by the proponents of what Neil Ascherson in his book "The Black Sea", described as the stimulating pseudo science of Nomadism. 'The human race say its exponents are entering a new epoch of movement and migration. The subjects of history once the settled farmers and citizens, have become the migrants, the refugees, the Gastarbeiters, the asylum seekers, the urban homeless'. Migrant media practitioners have studied the techniques by which the weak become stronger than their oppressors, by scattering, by becoming centreless, by moving fast across the physical or media and virtual landscapes. 'The hunted must discover the ways to become the hunter.'

(The ABC of Tactical Media, Extract 1: David Garcia and Geert Lovink)

The extract, quoted above, written in 1997 could not have anticipated anything as devastating or nihilistic as the September 11th attack. On re-reading the essay it seems, that although to a small degree prescient we were also extremely naive. Naive in our implicit assumption that tactical media (giving voice as it does to the excluded and disenfranchised) would automatically be harnessed to emancipatory social movements.

In Amsterdam there are two main groups making tactical media who have been affected by September 11th. On the one hand, as in most western metropolitan centres, there are loose coalitions of media makers made up of the old and new left. For these groups media tactics are an important tool in their role as part of a worldwide movement battling for global economic justice. As in other countries these local groups are having to re-examine their tactics in the light of a "transformed semiotic (and actual) landscape". But there is also another network of tactical media makers working in Amsterdam: large and diverse clusters of Islamic organizations that have developed their own local media culture. Among these groups are a number of mosques and related Islamic organizations

using small-scale media to inform and mobilize on behalf of the extreme wing of theocratic Islam. Not surprisingly they are having to come to terms with a new reality as the content of these transmissions are coming under greater scrutiny than ever before.

BACKGROUND

It is no accident that the term tactical media first appeared in Amsterdam. The city has a remarkable history of anarchic media experimentation and civic networking. Nearly a decade ago I described Amsterdam as a "pirate utopia for tactical media". Since then considerable damage has been done to the environment that legitimised this claim. Nevertheless some important aspects of the pirate legacy remain more or less intact. Most significantly, Amsterdam's long established community accesses radio and cable television.

The Netherlands was the first European country to establish a 100% cable infrastructure; as a result Holland's cable TV is not a luxury but a near universal utility. Amsterdam is also the only major Dutch (or for that matter European) city to have taken "tactical" advantage of cable television. No other city in Europe (except possibly Berlin) has Amsterdam's history of experimental television or its policy of "community access" TV and radio. A policy, which is both interesting and important because it is matched by a significant demographic diversity. Anyone with a TV in Amsterdam can receive the two "open channels". This evolving open network has been hosting experimental and tactical media (as well as more conservative transmissions) for more than twenty years.

Apart from the technical infrastructure there is also the nature of the city itself, a multilingual port of call for travellers and migrants from around the world. Amsterdam has the intensity of a major metropolis but it is actually a small town. Those watching TV at home are quite often within cycling distance from live transmissions. These factors combine to allow Amsterdam television to be an intimate communications medium. Perhaps the closest television can come to the best and the worst of the Internet.

MIGRANT MEDIA

As the years have passed Amsterdam has gone from one to two open channels. And these channels have been used more and more by specifically "migrant media". There is a "respectable" municipally supported program for migrants, which aspires to a broadcast standard of professionalism. And there are also a host of independent media makers whose approach to television is much looser. These transmissions range from those with ambitious production values to those who simply download satellite transmissions and hook them into the local cable. But whatever the approach, the extent and popularity of these programs indicate their importance in helping migrants to stay in touch with some idea of home.

Of Amsterdam's migrant media makers, Islamic groups are one of the largest cultures currently making use of the open channels. Even in a brief survey it is important not to conform to a monolithic representation of Islam. The richness and diversity of Islamic thought and opinion is to a degree reflected in the range and style of Amsterdam's local transmissions. At the last count there were 12 Islamic organizations transmitting regularly. Which, if you consider that Amsterdam is a small city of just over a million people, is fairly extensive.

The transmissions cover a wide spectrum of opinion and an equally wide geographical range. Many of the exclusively religious transmissions originate from local Mosques, which have direct connections to different Arabic countries and so the programs will be targeted at specific national communities. However, quite a few of these transmissions are simply satellite downloads of religious teachers speaking from the country of origin. Turkish Islam is also an important part of this local media picture, and Turkish transmissions cover the full spectrum of religious and political opinion. For example A Turkish group, TTA, is one of the most militantly anti-western of those using the cable network. On the other hand there are a number of groups notably Alternatief or Klas TV/Harman which although Islamic are generally opposed to the fundamentalist wing of the religion.

Both before and since September the 11th a number of complaints have been lodged with SALTO (the government agency tasked with structuring and to a limited degree controlling the output of the open channels). Only one of these complaints was considered serious enough to warrant investigation. Since September 11th SALTO itself has been approached by the Dutch secret service and asked to reveal information about a group of program makers called "Islamic Aid", which had a name similar to a group with proven links to Al Qaeda. But, as it turned out, the Amsterdam organization was completely unconnected to this group.

During their years of development the local media produced by Amsterdam's Islamic cultures have been mostly ignored by all but their intended audience. However after September 11th Holland's position as a tolerant nation has been badly shaken. And this has to a degree contributed to a violent (and unprecedented) swing to the populist right.

To outsiders Dutch culture can appear more enlightened than it actually is. The famous Dutch tolerance is not particularly "inclusive". It often consists of a policy of creating "permanent autonomous zones" in which controversial minorities can (and are even encouraged) to do their own thing, as long as they don't rock the boat and shake a fundamentally conservative status quo. For years this policy has proved effective at keeping political minorities, if not always off the streets, at least out of power.

After September 11th the Dutch sat up and took a new look at the Islamic cultures living in their midst, perhaps for the first time listening closely to what was being said. The broader implications of globalization had suddenly become apparent.

The militant wing of theocratic Islam has proved tactically apt; utilizing simple combinations of satellite to cable connections has helped to connect global networks to local media. In true tactical style, the tools of media technology have been turned on the technological society itself. The local and regional consequences of these facts are still unfolding.

NYU ORIGIN OF THE "TACTICAL MEDIA LAB" MODEL

The text above is a contribution to the "9-11 and After the first in a series of "Virtual Case-books" a concept developed at New York University's Center for Media, Culture and History. The story behind the development of this project is relevant to this festival because, as Barbara Abrash discloses below, the Virtual Case Book concept emerged from a small meeting hosted by the center in April 2001.

It was the urgency and strange persistence of interest in the concept of tactical media, at this small but intense meeting of inspiring activists and scholars that suggested that a network of such meetings, where findings could be reported and shared suggested itself, what we later called Tactical Media Labs. This idea suggested to us in Amsterdam the possibility that we might be able to make another Next 5 Minutes festival on the basis of an entirely fresh editorial approach. A process of coordinated decentralization of the Next 5 Minutes editorial practice. The challenge of attempting this experiment motivated us to try again with N5M. We proceeded on the basis of small local (and sometimes larger) meetings (Tactical Media Labs), allowing us to explore in actuality not just in theory the ambiguities of connecting essentially translocal media cultures with local contexts. We tried to connect and make sense of the outcomes of the labs, through an international network of editors (some but not all had hosted labs) using a moderated list and an evolving website. We hoped that this would grow into a festival program. Although this process has not always been easy our original hopes of more than two years ago have, to a surprising extent, been rewarded.

THE REVOLUTION WILL BE BROADCAST - AT LEAST LOCALLY

On contemporary Italian local television projects

By Alessandro Ludovico

"Once upon a time there was a king who ruled over a country and its big television networks, controlling the screens and the minds of most of his people." Unfortunately, this is not just a fairy tale. Prime minister Silvio Berlusconi is the head of a conservative, neo-fascist coalition in Italy that has more than 50 percent of the seats in both houses of Parliament. As the head of government, he decides all the strategic approaches and decisions of state-owned television (RAI) and also determines, as the owner, who is allowed to say what in his huge private television network (Mediaset). To get some idea of his commercial and editorial powers: RAI and Mediaset together cover 97 percent of the entire television advertising market.

In this climate of media dictatorship, a flourishing underground movement of media artists is concentrating, to an ever greater extent, on television as an arena for activism. Its roots go back as far as the mid-nineties. One of the first experiments was carried out in 1996 by a group of Tuscan video artists, including Giacomo Verde, Claudio Parrini, Francesco Galluzzi and Federico Bucalossi. This seminal 'minimal tv' [1], as it was called, deconstructed the medium by means of various performances, and tried to expose its hidden mechanisms. Its open studio constantly changed its schedule according to the wishes of its viewers, and broadcast its programmes to the scattered households via cable TV in the particular area. Part of the group also took part in the first 'Hackmeeting' (1998) with a local TV station called 'boicoopTV'. 'boicoop TV' broadcast the event to the surrounding area and asked residents what they thought about the imminent eviction of 'Hackmeeting' from the square where it was taking place. In the same years (1997-1999), surveillance cameras (CCTV) were set up by a collective of young video artists in Forte Prenestino, a fortress in Rome that is now a squat. During the urban Overdose Fiction Festival, the project had the title 'OFFline TV'.

After the last event, a local broadcaster in Rome gave the same collective - which was soon to become the performance-oriented Candida TV [2] (now one of the leading

broadcasters of the national Video Hacktivist Group) - one hour of broadcast time per week.

But only after the consolidation of Berlusconi's government (2001) with its unbearable propaganda did a large movement arise, with its roots in Bologna. This led to small groups producing their own 'street television'. Armed with Guy Debord's theories, and redolent of the pirate radio fever of the early nineties, 'Orfeo TV' launched its broadcasts on 21 June 2002. Matteo Pasquinelli, the editor of the essay collection 'Media Activism', and Franco 'Bifo' Berardi, one of the most interesting media theoreticians in Italy, are among the committed core members of the group. The project 'Telestreet' [3] spread rapidly over the entire country in a chain reaction. Following a national meeting ('Etere' [4]), the first joint broadcast took place on 22 February 2003. It involved no fewer than 25 small television stations throughout the country, which all broadcast the same video cassette. An active resistance network was publicly proclaimed as an alternative to the centralised and dull broadcasts of 'official' TV stations, a network that sought democratisation of the most widespread and powerful disseminator of information at grass roots level. Summarising the paradox of the potential illegality of these actions, the philosopher Stefano Bonaga declared "We are illegal, but constitutional," alluding to Article 21 of the Italian constitution, which guarantees freedom of opinion. The draft bill by Giovanna Grignaffini, a Member of Parliament belonging to the Democratic Left, takes the same line, aiming to establish the freedom to use local, unoccupied TV frequencies. On the web site of 'Telestreet', you find instructions for building your own TV station for 1.000 euros, along with other technical and legal tips.

The importance of the medium of television for political propaganda has always been recognised. For example, thirty years ago, during the obscure years of terrorism in Italy, the first public action of the Red Brigades was to illegally broadcast their theories in particular regions on the same frequencies as the midday news programme of the national TV station (tg1). These days, enthusiastic media activists and technicians who have contributed their knowledge to help build up a separate communications infrastructure are no longer alone in their efforts to peacefully democratise the TV screen. The new 'Megachip' association is promoting the important 'Basta Auditel' campaign [5] to get rid of the system of counting and measuring the TV audience, a system that is administrated unfairly by the big networks and acts as one of the main instruments of propaganda. 'No War Television' [6] focuses on gatherings and demonstrations and also found a broadcasting location here and there on a satellite channel; an Internet archive of its broadcasts has even been set up. 'New Global Vision' (NGV) [7] is a huge archive, regularly updated, that comprises over one hundred videos by artists and activists, all downloadable for free. The NGV meets the VHS quality standard and is the unofficial depot for a critical camera generation - a visual database, open to all. "The contents have to be expressed through movement, by the critical awareness of each individual, by all those who create culture and information on an independent basis," says the manifesto of the site, which is based on open standards and license-free software.

Having a media mogul as prime minister creates the ideal basis for sounding out the potential of a media practice of resistance that is also able to integrate spontaneous phenomena of the scene. The self-styled 'Union of Televisions' in Milan, for example, proclaimed a 'country-wide strike of the television audience' and called on those that wanted to listen to switch off their televisions and go out into the open with their remote controls. Its slogan was: "Liberate free time ... for becoming aware of everything we do not see when we watch television". The next goal suggested by the Union is a 'Law on the

Rights of the Television Audience,' this time also integrating the performing arts. 'Tubocatodico' [8] takes the psychotic effects of intensive television viewing as the basis for a performance that was conceived by a computer/electronic music/theatre collective using only free software ('FreeJ and dyne : bolic' GNU/Linux), to "exorcise the evil household device": probably the most liberating exorcism that a free spirit can strive for.

- 1 <http://www.minimaltv.cjb.net>
- 2 <http://candida.thing.net/homeNOfram.html>
- 3 <http://www.telestreet.it>
- 4 <http://www.ecn.org/tpo/tpo.php?id=culture&v=91>
- 5 <http://www.megachip.info/readnews.php?id=114>
- 6 <http://www.nowartv.it>
- 7 <http://www.ngvision.org>
- 8 <http://tubocatodico.dyne.org>

Website [<http://www.neural.it>].

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TACTICAL TELEVISION IN ITALY

For a participative democracy of mass media

By Matteo Pasquinelli

Telestreet (<http://telestreet.it>) is a spontaneous network of very-tactical street TV stations (like French proximity TV stations) that broadcasts lo-fi videos a few hours a week by a 1000 euro 400 meters-range equipment. Telestreet was born to protest against the Mister B* media monopoly: according to Italian law it is pirate and illegal. It's low-budget and self-funded.

No War TV (<http://nowartv.it>) is a satellite channel for alternative coverage of the Iraq war (these days it stopped broadcasting, but it should start again with another name - interesting problem). It gathers media activists from a wide political spectrum: Indymedia, Social Forums, "Girotondi", mediawatch groups (like Megachip.info), and mainstream media practioners too.

Global TV (<http://tvglobal.org>) is the satellite channel of "Disobbedienti" and the Communist Youth. They claim to be a militant partisan TV and not an independent TV: a kind of I-say-what-I-think rap. They started in Florence during (but not within) the European Social Forum.

Urban TV (<http://urbantv.it>) is a project (in which I am involved after Telestreet) for open access television in Bologna and in other Italian cities, filling the level between the street and the satellite. It's an attempt to bring the Open Channel format which is unknown here, if you will. It tries to face some issues not resolved yet in other projects, such as organisation, continuous programming, content sharing, community participation, European networking (*we look for European partners*), transparent funding and non-profit economical autonomy. For these reasons we started a development website and wrote down a manifesto.

The Manifesto of Urban Televisions reflects the current Italian debate on media, hybridising it with Dutch blends like Public Domain 2.0 and with some tools from French-Italian post-fordist criticism (I like to describe Urban TV as a post-fordist medium and not only as a tactical one). I know (but I'm not sure) this TV hype is a déjà vu for a lot of tactical nettimers. But I believe that the New Thing *here* is the connection of the (big) Italian movement with new media activism.

MANIFESTO OF URBAN TELEVISIONS

For a participative democracy of mass media (and the realisation of the first Italian open access television)

<http://www.urbantv.it>

MANIFESTO

1. Scenario: independent communication and media monopoly 2. New rights: the right to self-organise communication 3. New spaces: the Public Domain of media 4. New policies: the culture of new media 5. Tactical media: television meets the net 6. Tactical television: public access channels 7. Tactical contents: from national programming to urban programming 8. The urban model: television rooted in the urban life 9. The economical model: non-profit cooperative media 10. The political model: the autonomy of society

ACTIONS

1. BOLOGNA URBAN TV 2. PUBLIC DOMAIN 2.0 CAMPAIGN

1. Scenario: independent communication and media monopoly

A new kind of media culture is spreading worldwide: next to the traditional means of independent communication, such as radio and internet, today we find hundreds of experiments involving an "old" medium like TV: independent television stations, street and satellite video channels, web TV stations and community channels. This video activism wave targeting TV was born as an alternative to a worldwide corporate and public television monopoly.

Today we believe society has acquired the democratic maturity and the cultural and technical know-how to self-organise its own media in the form of Urban Televisions: open access television channels rooted in the city life.

2. New rights: the right to self-organise communication

During the last decades society has developed a new consciousness on communication rights. Today such rights are claimed together with all the other universal and citizenship rights. See for instance the People's Communication Charter (www.pccharter.net).

This new consciousness needs to grow further: within the frame of a new public domain of media, society must recognise its active right to self-organise communication, and not

only the simple passive right to access communication.

3. New spaces: the public domain of media

The culture of independent communication in any form, from video activism to free radio to free software, has opened a new space among common media and technologies, a space whose political and cultural citizenship must now be recognised.

The cultural, political and legal frame of this movement is a space that we call the public domain of communication. As a public domain we understand a sphere which does not belong either to the state or to the market, but to the whole of society, and which is managed and controlled by society itself (not to be confused with the public service offered by the state).

The actors that have contributed more to the extension of the public domain must now work on the internal self-organisation and external visibility. See the Dutch campaign Public Domain 2.0 (www.waag.org).

The new autonomous public domain of communication must be recognised by institutions as a means of participative democracy and new municipalism. Institutions must finally support the instruments and solutions to transform the fordist society into a post-fordist society.

4. New policies: the culture of new media

Institutional policies on new media only consider the question of access (often in a market-oriented perspective) and do not understand their value as a means of democratic participation and as a catalyst of culture and innovation.

During the last years, thanks only to new spontaneous practices coming from society, a new media culture was able to grow. The delay of institutions has allowed the independent communication movement to reach the critical mass and self-organise into autonomous entities.

Italian cultural policies only invest in the preservation of cultural heritage - they only consider new media as new containers for old contents. The fact that they don't invest in innovation like in the north of Europe results in an intellectual gap. New media need to be recognised as autonomous forms of culture and social experimentation.

5. Tactical media: television meets the net

The net has represented the period of discovery and training to participative media. But it is still television that maintains a central role in society, culture and politics. For this reason, it is necessary to deconstruct it in a real democratic way, and to let the television medium meet the net medium. Television must be considered a new prosthesis and an extension of the net: but to avoid another alternative media "ghetto", the horizontality of the net must meet the "socialising" power of television.

Possible strategies for independent communication are gaining access to channels and technologies, proliferation of broadcasters and production of alternative contents. For Urban Televisions the nodal point is not only the simple control of channels or contents,

but also the re-conquest of the collective enunciation of the message. That is, the re-conquest of the public and collective role represented by television.

Working today on the television medium can be interesting only if it is transformed into a new participative, transparent and ethical medium. It should address its power to the cultural and economical development of society itself, and not only to support market or political consensus.

6. Tactical television: public access channels

For this reason it is necessary to create Urban Televisions in the form of open access television channels and to promote a social and communitarian participation to them.

"Public access" means a TV channel not only accessible to, but managed by the communities that compose the social life of a city. Public access has a meaning if it is used for a collective content sphere, and not for a top-down programming.

"Community television" means television that is more than simple public access and a rhetorical exercise of free speech (open publishing); it should also "make society" and build social texture (community access and not simply open access).

Urban Televisions are based on a wide social participation and do not only involve media activists and practitioners (as they consist of several independent projects).

Urban Televisions have a social mission and status safeguarded by an Ethical Chart that recognizes all rights, duties and pleasures of a participative communication.

The Italian delay in public access media must face those European experiences that show the possibility of creating television stations managed by society itself.

7. Tactical contents: from national programming to urban programming

Urban Televisions are television stations that produce information, entertainment and culture and are able to construct a daily narration in which the whole society can recognise and confront itself. Urban televisions re-conquer programming as a genre of collective narration. Whereas national programming is the backbone of the political consensus and of the social biorhythms, urban programming is made from the bottom upwards.

The heart of Urban Televisions is a community programming which mirrors the whole social mosaic and leaves its spaces to self-organisation of communities and single citizens. Community Programming also organises democratic spaces of confrontation and respects the most radical and anti-conformist styles and contents.

8. The urban model: television rooted in the urban life

Independent communication must discover the city again as a new dimension of action, because the city is the first and elective ground of constructing society. A public access city television can root easily into any sector of civil, cultural and economical life. Urban Television turns out to be a precious means and a model of participative municipalism.

We have to stop considering the movement as the first speaker of free communication

and be prepared to construe society and conquer everyday life spaces. The aim of the Manifesto of Urban Televisions is to transform an international innovation movement into a movement that actually builds up society.

9. The economical model: non-profit cooperative media

New models of social communication are only a credible alternative to monopolies if they are economically autonomous. Media-activism must avoid some of the errors made in the past: in its history it has created ruptures and invented practices that the market has promptly colonised (Italian free radio of the seventies for instance cleared the way for commercial radio).

Urban Televisions are based on a model of non-profit social cooperation, where profits are re-invested into new productions and projects for the communities.

Urban Televisions work as meta-medium of local economy in a post-fordist perspective: they trig the multi-media economy, valorise bottom-up productions and realize a content economy with social aims.

10. The political model: the autonomy of society

Urban Televisions are born out of the initiatives of society and not out of institutions or the market. Institutional policies must recognise self-organisation in the field of culture and media, and must avoid the simulations of "civil society" and "social communication" for political or commercial purposes.

Urban Televisions inaugurate a new relationship between the society and the economical and institutional subjects. This way they overcome the old vertical structures of mediation and political representation to give room to new horizontal and autonomous networks, more suitable for the contemporary post-fordist society.

ACTIONS

1. BOLOGNA URBAN TV

The first Italian open access television channel is going to be launched in Bologna, with the name of Urban TV. Citizens from the most important cities are invited to develop Urban Televisions to transform media-activism and independent communication into a constituent and lasting process, with the aim to build up an Italian and European network. The project based in Bologna represents a prototype for all Italian cities. Bologna Urban TV becomes effective through the following steps: the creation of a non-profit association, the launch of a development website (www.urbantv.it) and the launch of a social campaign for a new civic culture of media and television.

2. PUBLIC DOMAIN 2.0 CAMPAIGN

Public Domain 2.0 is an international concept to introduce new ideas and instruments for a modern media culture. Bologna Urban TV wants to focus particularly on the following three points: a new debate on the public domain of communication, bandwidth access for a civic and social use of communication, and a social economy based on new media.

Translated by Cinzia Negherbon
Open to collective editing
<http://www.urbantv.it/>

LOOKING INTO THE PRACTICE WITHIN THE LABS

By Mrityunjay Chatterjee

To talk about the Cybermohalla project is to talk about concrete practices and how they relate to forms of knowledge. This is essential when we reflect on being producers of knowledge. What we are trying to follow and understand is the intricate web of processes involved in the development of a group - not just an aggregate of specialised selves. We also try to follow how this group generates within it a capacity for self recognition, for intersubjective recognition, for understanding the social biography of the neighbourhood and for developing a sense of and addressing diverse publics.

We have been working with diverse media forms, namely diaries, animations, wall magazines, conversations, interviews, recordings, readings and mailing lists. Working with these forms makes possible the articulation and production of different types of knowledge. These multiple media forms, then, produce multiple forms of engagement. By actually working in and between different registers, diverse creative resources are made available. These resources in turn make thought processes more agile, receptive, and vulnerable.

Let me elaborate this through sharing with you our experience of this multiplying multiplicity. I will discuss the types of media separately, though in practice, of course, the use of media forms is more fluid.

1. WRITING

Over the last two years at the labs, a sustained and regular practice of writing has emerged. Everyone writes in diaries - small notebooks with ruled sheets, the kind they perhaps use in school. Some of these writings are in the biographical register. For example, Naseem Bano's poignant text about the transformer in her house. She writes, "My father had bought the transformer from the money he got by selling our house in the village. It is the only thing we have to remember our father by. Now our house here is permanent - that is, made of brick and mortar. But the transformer continues to be kept in the same place as before. There is no chance it will ever be moved from there." Or Dheeraj's everyday antics brought out in texts like the one about the day he drank petrol thinking it was water! And Lakhmi's ironic writings about his experiences at school.

Some writings are in the register of space - Yashoda's text about the staircase that transforms into a meeting space every morning when people line up to fill water. Nilofer's thick description of a tea stall she passes by every day. Or Azra's cinematic description of a room - she writes, "My friend was sitting with her back to the door. So there was very little light on her face. Each time there was a sound outside, she would turn, and the light from the door would sharply define her profile. Light was also coming in through the window. But there was a recently constructed red brick wall in front of it. So the light bounced off this wall before entering from the window, and so was red in colour."

Writings can also engage with the biography of another - by writing about someone

imaginary or someone whose story is known through conversation. Shamsheer writes about Dilbagh Khan "who is forty years old and whose eyes are always red-rimmed from the amount of alcohol he drinks. Who drives an auto-ricksha and beats up his wife and kids every day." Or Yashoda, who writes about the beautiful and young Phool Bano who she has heard has lost her senses and roams around the streets all day, laughing at passers-by and spitting at them.

There can be other ways of writing of course! What these different ways of writing accomplish is that they open up ways of thinking. For example, we can think about space, not just in its materiality, but through soundscape, light, and colour as well.

2. NARRATING

The texts that are written in these notebooks are shared with one another through the practice of reading one's own text aloud, and the act of listening to each other. These acts of narrating and listening lead to thinking about what questions can be asked about each other's experience and what words can be found to link each other's experience.

Questions that are asked then are incorporated into the telling. Words and phrases that resonate with the experience of others find themselves in newer texts, in other narrations.

3. CONVERSATIONS

This is another very important form. The conversation can be conducted through questions and answers, but can also have a different form. Nisha explains, "When you talk through question-answers, you define a boundary within which the conversation will flow, choose a target through which you figure out what you want to say. In conversations without question-answers, *baatchee mein suggestions pe suggestions nikalte rehte hain, aur baatchee chalte rehti hai. Aap dayra nahin banate aur apne aap ko kholna padta hai* - the conversation proceeds through suggestion upon suggestion, where the self has to open up to the other."

4. E-MAIL

The Cybermohalla mailing list is another form to engage with. Postings have an improvised texture. Mails posted on the list are often addressed to individuals, though meant for the whole group. They often refer to gestures of peers, and to the nature of interactions with them. Many posts are about recent experiences that have not been made sense of yet; about encounters in the city while travelling from one lab to another, accounts of interesting incidents and conversations through the day, quick reflections and questions that everyone can think through. The mailing list has not yet developed into a full form. But it is definitely a different mode of expression, though still in its preliminary stage. We see these forms as "peer forms" - forms that have evolved through peer-to-peer interactions. Through these forms experiences and reflections can interact with others'. By communicating with each other, thoughts are teased and cajoled, and over time the group develops a complex culture of self and intersubjective recognition.

5. WALL MAGAZINE

This is a primary "public form" of the labs. Texts are written and selected for a twelve-page wall magazine designed and produced at the lab. It is then photocopied and circulated in the locality by putting it up on public walls. So far, three wall magazines - named *Ibarat* (or *Inscription*) - have been published. Translated versions of them can be found on the Sarai website.

After spending their childhood in the locality and growing up within the neighbourhood, the young CyberMohallah practitioners are faced with an interesting problem. It is still a struggle for them to achieve a mode of addressing the locality. They need to move from an experience of being addressed - by the world of the adults - towards being in a position to give something to the locality, and find a mode of addressing their neighbourhood.

The problem is deciding which topics to discuss, which tone to adopt - it is a problem of what their vantage point ought to be. The first three wall magazines discussed names of streets in the colony, work, and the trip to Bombay. But after that, they needed a pause to search for topics with a thematic resonance in the colony.

6. PHOTOGRAPHS

Photographs are both digital as well as regular prints. The two, however, do not displace one another. Rather, they both create a different dynamic. The prints create an immediate sociality around them - they can be arranged in photo albums, they can be looked at individually or in groups and can be passed around. The digital photographs create around them a mediated sociality: they are seen on the computer screen or through a limited number of printouts that can then be circulated. They, however, make for quick downloading and manipulation on the computer and find their way into the animations.

7. ANIMATION

Animations, or animated drawings, reveal an enigmatic inner world of stories and rhythms. My sense is that a play of unravelling and revealing, that is accretive, draws the group into exploring narration through animations. Interestingly, it is the practice of creating animations which propels them into narrating through drawing - something they rarely do on paper otherwise.

8. SOUND

The practitioners have made analogue recordings of great diversity, ranging from recordings of themselves - readings etc. - to recordings of ambience and interviews in the locality and the city. At present we have about forty hours of recordings. Some examples: a confrontationist interview with an old grandmother, a walk through the neighbourhood, a recording of a circus, a recording of self-stuttering.

The question now is what creative resources these practices are building. What is interesting is that the practices of taking photographs, recording sounds and creating animations seem to have an archival impetus, rather than being object-oriented, or with an "output" in mind. They are practiced constantly and are also catalogued and logged. This archive then, will create a centripetal force: it isn't worked with to be presented to a public, but rather, it may create a pull - the "public" must come to see it.

Sarai CM researchers, on their part, engage with the labs on both the "peer forms" and the "archival forms" to see what public forms they might take so they can be presented to a more abstract public. Examples are the bilingual publication of texts, images and animations, "Galiyon Se / by lanes", as well as installations and other types of publications like notebooks, boxes with CDs and booklets. The movement between the "public forms" and the "peer forms" has set in motion a very productive line of thought on accessible, mobile "micro forms" such as postcards and booklets - forms of media that can travel through diverse spaces with the possibility of a return to the lab, bringing other experiences and other practices.

ABOUT CYBERMOHALLA

Mohalla in Hindi and Urdu means neighbourhood. Sarai's Cybermohalla project takes on the meaning of the word mohalla, its sense of alleys and corners, its sense of relatedness and concreteness, as a means for talking about one's 'place' in the city, and in cyber-space.

One can approach the Cybermohalla project from many directions. One can begin with a critique of the technological imagination and the expressive universe of the dominant mediascape, and then go on to map a counter strategy which grounds itself on access, sharing and democratic extensibility. One can see it as an experiment to engage with media technologies and software 'tactically', and create multiple local media contexts emerging within the larger media network that the Internet seems to engender. Still further, one can see it as an engagement with local history, experiences, modes of expression and creativity.

In its broadest imagination, one can see Cybermohalla as a desire for a wide and horizontal network (both real and virtual) of voices, texts, sounds and images in dialogue and debate. 'Public'-ation modes are and will be as diverse as wall magazines, books, posters, stickers, web pages, audio streams, animation etc. The present technological juncture provides a possibility - the point is to actualise it.

Cybermohalla is a collaborative effort between Sarai - A New Media Initiative (a project of the Centre for the Study of Developing Societies) and Ankur - Society for Alternatives in Education (an NGO experimenting for the last two decades with alternatives in education). At present, the Cybermohalla nodes are located in Lok Nayak Jai Prakash basti (a slum settlement bordering the old city in Central Delhi) and the Dakshinpuri working class resettlement colony (South Delhi). The media labs run on free software - three computers with a GNU/Linux environment, with image and text/html editors, mail clients and browsers, and low cost media equipment - sound booth, portable sound recording units, printer, scanner, analogue and digital cameras. Called Compughar, or computer-house by the participants who are between 15 and 23 years old, these are self-regulated spaces where terms for engagement are set through working with various media forms and tools, and the members' reflections on their relationship with their locality and the city.

Jeebesh Bagchi

URL: <http://www.sarai.net/community/saraincomm.htm>

9-11 AND AFTER: A VIRTUAL CASE BOOK

By Barbara Abrash, September 2002

The attack on the World Trade Center was--among other things--a stunning media event, and there was no shortage of analysis on mass media coverage. We saw no reason to replicate what others were doing. What no one seemed to be looking at closely was the significance of this ephemeral material that filled the streets and parks in New York below 14th Street or its relationship with the new media that was also flooding our lives. This part of Manhattan, not far from Ground Zero, is our neighbourhood, and during the days that it was cordoned off, it became a pedestrian city, with people claiming the streets. We were an isolated neighbourhood, but also a community that is at the epicenter of global communication.

As the patriotic rhetoric of "war against terrorism" kicked in, and TV became our national grief counselor, the rains came and the City moved to dismantle the shrines, murals, memorial walls, and photographs; at the same time, weblogs and e-mails threatened to disappear. We became aware of just how important small and ephemeral media was, and how little serious media attention (other than a kind of sentimental trivializing that further marginalized it) it was receiving.

To us, it was evidence of the daily lives and spontaneous creative expression of a community responding to crisis; as the raw material of history; as the material of counter-narratives to the official versions; and for what it revealed about the forms and networks of expression took shape in that chaotic time. We also realized that we had colleagues at NYU who look at questions of everyday life, performativity and politics who had begun to look at the same issues. We solicited contributions from them, from students, and from the members of the group who had met in April.

9-11 and after is an experiment, a prototype and still very much in process. It is a gathering of essays, reports, websites, first-person accounts, films and videos that document, frame and analyze the ephemeral material of September 11 and the days immediately after, specifically focusing on Lower Manhattan.

It is a hybrid publication - an interactive reference book that is not only a resource, but a site for research and analysis, and a teaching tool.

9-11 AND AFTER IS ORGANIZED INTO FIVE MAIN SECTIONS:

- * Reverberations provides larger perspectives on the unexpected capacities of old and new media.

- * Extreme Close-Up documents and contemplates the implications of the effusion of ephemeral material in Lower Manhattan, as people tried to comprehend and communicate.

- * Rethinking, Rebuilding, Rewiring demonstrates how New Yorkers used public spaces to rebuild their relationship to the city, in the face of exhortations to "get back to normal." Field Reports offers examples of how people around the world reshaped trajectories of news and information from around the globe

- * Resources provides extensive lists of websites, films and videos organized in categories: first-person accounts, news/activism, etc. – with contextualizing essays.

The virtual case book is, at the same time, an archive and a gathering of archives. For some (see interview with Andrea Vasquez on 911 Digital Archive, www.911digitalarchive.org), it is a depository of suppressed or unnoticed stories, folk art and information - a source of material for historians and for counternarratives. Here is New York (see interview with Charles Traub and www.hereisnewyork.com) combined visual and virtual worlds a website and a public space to which anyone could bring their photographs of the attack and its aftermath, to be digitized and displayed.

- * Television Archive (<http://tvnews3.televisionarchive.org/tvarchive>) gathers 9-11 coverage from 19 television stations available to the public proposing, as Meg McLagan

notes in her essay, "Archival Interventions," a digital alternative to copyright.

* www.peoplespoetry.com, was a site to which anyone could submit a poem. True to the recombinant character of digital material, selected lines from this site (and from lines solicited from professional poets) were fashioned into two poems in the shape of the towers, each 110 lines, which became part of Missing: Streetscape of a City in Mourning (see interview with Marci Reaven.) Ted Byfields' Reconstruction Report (<http://reconstructionreport.org>) is a multi-faceted research and information site that seeks to promote "public understanding of the redevelopment of the WTC site."

These examples only begin to suggest the range of interventions, issues, and opportunities for research and commentary that are embedded in the virtual case book.

Our goal is to develop cooperative research projects - with special focus on how the VCB can facilitate teaching. Some possibilities that have been proposed include: the complexities of archiving and evaluating ephemeral material; issues of intellectual and cultural property; and the kinds of social and aesthetic interventions this material represents.

The Virtual Casebook:

http://www.nyu.edu/fas/projects/vcb/case_911_FLASHcontent.html

TRANSCENDING POST-COMMUNISM?

Joanne Richardson, August 2003

"In Central and (South-) Eastern Europe the cultural landscape has entered the Post-Soros Era, while still awaiting the arrival of the widely expected EU patronage for the arts and the civil sector..." (from the original description of the "Enduring Post Communism" panel)

Hypotheses: Eastern Europe is not a territory but a myth once used to prop up the cold war. Soros is not an era but an ideology, and it hasn't vanished, it just changed its domain. Civil society does not exist.

When, as they say, the curtain fell, activists from the wealthiest corners of the world cast their hopes and aspirations toward the countries of bearded intellectuals with deep accents who talked politics over unfiltered cigarettes and a bottle of palinka, where oppositional culture somehow seemed more real.

"Maybe the changes in eastern Europe were not about a switch from communism to western style democracy, but rather about the potential to invent a different kind of social arrangement, some way out of the dichotomy between closed authoritarian regimes and the *blessings* of the free market. That potential is already squandered, the new EU members are being assimilated by the collective and the other states are still lagging behind in their enduring postcommunist state, but ultimately en-route to the EU and the world market system" (Eric Kluitenberg, excerpt from a post to the n5m4 list, 24.08.03)

The hope was that something in the communist past (or the legacy of cultural opposition during its last phase) would create the potential for a radically different society, if not the third, then maybe a fourth road to socialism. The reality behind the dream, taking Romania as one example, has been the near collapse of industry, a gradually deteriorating system of agriculture sustained by small farmers, a completely inadequate health-care system, salaries below 100 euro per month, and a situation of perpetual economic crisis in which any superpower who could bring in a promise of foreign money is almost unanimously welcomed with open arms. In the general confusion, promoted to the level of national policy, it mattered little whether this would be NATO or the EU.

Many people (the ones who are old enough) speak with pride about the time at the beginning of the "transition" when there was a lot of noise, when artists suddenly discovered happenings and started making political theater in public spaces, when intellectuals and writers started thousands of small newspapers and magazines almost overnight, when the newfound culture of demonstrations started taking root and people began gathering together on the streets. Fourteen years later, everything seems much quieter.

"I'd like to quote how the situation was pointed out to me by Victor Voronkov, Director of the Center for Independent Social Research in Saint-Petersburg. It starts with one anecdote-like story. A researcher, sitting in his cabinet, was bothered by the noise which a group of children was making outside. It was so terrible that he couldn't concentrate on his work anymore or make any progress. So he came up with the following trick: he went out to the children and suggested to them that if they shout even louder then he will pay them a dollar. The children got very happy and made noise twice as loud to get the money. On the next day the situation repeated and he again came to the children with the same idea, but this time he suggested to them only half a dollar. The children continued but this time already not so enthusiastic. On the next day he again asked them to make more noise but without any payment. As a result the children stopped shouting at all. That's exactly what happened with many NGOs and activist movements in Russia." (Tania Goryucheva, excerpt from a post to the n5m4 list, 28.08.03)

Some friends in Bucharest organized antiwar demonstrations last February and March. About 100 people showed up, the most you can hope for now at any demonstration in Romania. After the protests they discussed how to go forward, what to do next. The result of two months of organization and many discussions on the mailing list was a decision to form a new NGO. The NGOification of nearly everything is one of the strangest turn of events during the past few years in Romania, whether it is an art space, a magazine, a self-help group, a political formation or even a loose group of people with very divergent interests who gather on the streets to demand the right to voice their opinion. Most NGOs operate in starts and fits, and inertia quickly sets in once the sources of funding start to dry up. The NGOification of the civil sector also tends to atomize and to isolate. Subsisting as a kind of monad, each NGO is busy doing its own thing (according to its stated objectives and activities), each has a relation to its funders and to its potential benefactors, but seldom any relationship with the other monads. It is very hard to discover a network of different groups joining efforts and collaborating toward a common vision and aims - and a "civil society" in the true sense of the word would presuppose exactly these absent social relations.

It does not take a paranoid frame of mind to start second guessing the so-called benevolence of funding for the NGO sector of former communist Europe, especially big players like Soros or the new European Commission. A widespread depression about the with-

drawal of Soros and the end of the post-communist Soros era seems to have set in. Although Soros was never synonymous with post communism, this angle formed an initial stage of the Soros project. Post-cold-war would be a better term than post-communism insofar as it shows a dialectical relationship rather than a one sided pole - the relationship between the US and what it considered an evil Eastern Europe, the big other against which it could define its own American way of life and democratic institutions (consumption without restraint and "free" elections). The Soros interest in former communist countries did not stray too far from American foreign policy, which handed out aid to "developing" countries as a way of preventing any potential threat to its ideological hegemony (national security). At a time when the US was worried about the political instability and potential threat of those countries which had just emerged from communism, George Soros pumped in a lot of free money to help them make the democratic transition from "closed" to "open" societies. Today it seems very inaccurate to talk about Post-Soros when the Soros structure of philanthropy is still very much alive, though it has now shifted its priorities to other regions of the world (the oil belt in central Eurasia/Caucasus, Southeast Asia and inner-city America). This does not mean that what used to be called Eastern Europe has disappeared off the map of development aid, only now it has been renamed and is judged to be the EU's problem as a new potential threat of mass migration from poor countries looms on the horizon. Whereas Soros' concern with ideology translated into funding primarily for art and culture, "the widely expected EU patronage for the arts and the civil sector" is likely to be negligible by comparison, since the main focus of EU patronage seems to be the economic and technological infrastructure of acceding countries.

When "Enduring Post Communism" was proposed as one of the debate for the N5M4 festival, a lot of objections and criticisms were voiced on the editorial mailing list. Partly it was because the terms and the purpose of the debate seemed unclear. One of the issues that emerged during the discussions was that since the "post-communist" frame was coming from the outside rather than the inside, we should not buy into this and avoid perpetuating the myth of transition by creating ghettos among ourselves. On the other hand, the purpose of the panel was to bring together new media NGOs in the region (although Bulgaria and Latvia can hardly be said to be part of the same region) in order to share our stories, tactics and aims, and try to build a better network between us. On the other hand, Eric Kluitenberg suggested that the problem seems to be not that we are regional, but that we are too much a part of an international network of media culture (international festivals, meetings and funding structures) and that we might need to better learn how to become more closely involved with our own local contexts. The confusion and contradiction exists not only in the mind of the moderators of the panel, it is often real. For the purpose of funders we are Eastern Europe and we have no problem using the transition discourse to get money which allows us to become part of a larger international community. Probably for most of us, it's not the international community the funders intend (with its neoliberal agenda and its language of rights and democratization), but another global network which is very critical of it. And sometimes we become so deeply involved in this global discourse (something that seems especially true for groups promoting open source, electronic democracy or information campaigns about the dangers of IP rights) that we appear quite foreign to local concerns. As Peter Style from CUKT replied in an interview when asked what it was like to be one of the pioneers of net activism in Poland: maybe that makes us feel somewhat "sad and lonely."

Despite the resistance by some of the international editors toward being grouped in a panel under the "post-communist" label, the discussions and sometimes heated debates

gradually made it clearer why it makes sense to come together and to talk about uncomfortable issues which nonetheless bind us together. I have compiled a list of questions from the discussions on the N5M4 editorial mailing list, which I would propose as a general frame for starting the "post-communist" debate:

1. Is there a gap or a shift between the old post-cold-war language of transition and the new pre-EU language of ascension, or are these experienced as a continuation of the same development paradigm?
2. Are "Eastern Europe" and "post-communism" interpretations coming from the outside or is there something truly in common between these countries, and especially in the ways in which media culture initiatives are emerging?
3. If "post-communism" is a merely external interpretation, to what extent has it been internalized? Because even though a lot of people reject the idea of being categorized under the Eastern Europe subsections of events, there seems to be a tendency for groups from these neighborhoods to hang out together at large, international events. Why is that?
4. In many former communist countries the NGO sector seems to be more like an alien virus than a vital organ of society, artificially implanted and kept alive with outside sources of support. To what extent are the concerns of NGOs in these countries determined by the international networks that they are part of? How can connections to the local scene be strengthened?
5. Why is apathy among young people, the absence of a civic sphere, a general non-interest towards public discourse and communication, and a tendency toward hierarchical organization in the cultural and social sectors common to many former communist countries?
6. Does it make sense to attempt building networks that are specific to media culture initiatives in the former communist countries? Can we identify other points of common interests and aims that do not rely on the post-communist/transition narratives?

THE MAN INSIDE THE MACHINE IS STILL THERE

“It seems to me that crucial issues to address is: Who produces the computers themselves and under what conditions? How has digital technology and manufacturing profoundly changed labor conditions globally at every link of the chain from the chip manufacturer to the systems analyzer and programmer? We cannot just treat ‘the computer’ as a naturalized machine or system. We must continue to question how it comes about, what labor and life conditions have grown up around its manufacture, distribution and deployment.”

- Faith Wilding (from the N5M4 editorial list) -

The pink-wash of computer cultures or the persistence of the gender issue

The time that the world of computers could appear to be the exclusive domain of white males is long past, but in many senses computer-related practices can still seem to be permeated by masculine as opposed to feminine values.

Computer cultures of the nineties were strongly committed to sever the link between computers and typical masculine values, such as calculative reason and military-style aspirations to command and control. However, even if we have learned to associate computers with supposedly feminine ways of doing, like creating things by intuition rather than reason, and associative rather than logical thought, the project of the femininization of computer culture has been a deeply partial one. A simple and banal exercise of sifting through the names of speakers at computer culture conferences in recent years provides enough of an indication: for every eight men, we find about one woman.

There may be many reasons for the persistent masculinity of computer cultures. There is for example the nostalgic (?) fascination for Cold War-style issues and projects, that remains alive and kicking today, in mainstream as well as alternative computer cultures. In the cold war days, computers were at the heart of big science, big business, big military and big governance operations. And in as far as these institutions still count as a natural home of computers, their culture, and their politics, remain closely associated with "tough" and rather more masculine issues of command and control, intelligence, and security. When it comes to alternative computer cultures, more in particular, their

famous commitment to practice, caught in notions of "do-it-yourself" and "hands-on", also brought with it a rather narrow pre-occupation with executive action and technical expertise. And it could be argued that in some respects a surprisingly classic ideal of the intellectual-artist has persisted as part of these cultures, (s)he is supposed to be technically sophisticated, vocal, "in the know", and argumentative.

In this respect, it is still all important to think about ways in which computer cultures could accommodate the feminine, or more simply, women, ways which should move beyond the happy affirmation of the intuitive and the associative of the nineties. In that sense, the challenge would be in particular to broaden our notions of what counts as computer-related practices, to reframe the cultural and political issues associated with the computer, and to find inviting ways to address these issues as part of computer-related practices, in the broad sense of the term.

TANDEM SURFING THE THIRD WAVE: PART 3

Interview with subRosa

By Ryan Griffis, 2003

This interview was conducted between subRosa and Ryan Griffis via email correspondence during the first half of 2003.

subRosa is an artists collective that produces performative and new media projects that critique the relationships between digital technologies, biotechnologies and women's bodies/lives/work. subRosa was initiated in the fall of 1998 as a project at the STUDIO for Creative Inquiry, from which it has evolved into its current form, a collective of five women dispersed throughout the US. Current subRosa members are Laleh Mehran, Hyla Willis, Steffi Domike, Lucia Sommer, and Faith Wilding. A new book, *Domain Errors: Cyberfeminist Practices*, edited by Faith Wilding, Michelle Wright and Maria Fernandez, was recently released by the group and published by Autonomedia Books. subRosa can be found on the Web at <http://www.cyberfeminism.net>.

1. RG: Could you briefly discuss cyberfeminism and how it relates to other historical versions of feminism and critical theory?

sR: The question of how to define cyberfeminism is at the heart of the often contradictory contemporary positions of women working with new digital technologies and feminist politics. (1) Cyberfeminism (CF) appeared toward the end of the 80's as a promising new wave of (post)feminist thinking and practice that began to contest technologically complex territories. By 2003 cyberfeminism is still a controversial and puzzling term - as was made evident by a recent lively exchange on the Undercurrents mailing list.

(Undercurrents is a mailing list discussing intersections of cyberfeminism, postcoloniality and technology; it was initiated by Coco Fusco, Maria Fernandez, Faith Wilding and Irina Aristarkhova in 2002). In fact, the attempt to avoid defining cyberfeminism became a central tenet for Old Boys Network, a cyberfeminist group that is attempting to create a CF politics and practice of dissent [dissence] rather than adopt a univocal political position or program. Not surprisingly though, the refusal to define a politics grounded in specificity often ends up reinforcing existing structured inequities such as those of race

and class.

Members of subRosa differ in our politics, practices, and everyday life conditions, but we agree that perhaps the most urgent issue for cyberfeminist and feminist practice and theory currently is that of seeking female affiliations that respect difference and create productive projects in solidarity with others who are working on similar issues.

subRosa believes that cyberfeminism is theoretically and historically grounded in feminist philosophies and embodied in political, cultural and social practices. Crucially, CF needs to be informed by postcolonial theories and critiques of technological culture and representational politics. Areas of CF intervention and practice include research on the specific impact of ICT (Information & Communications Technologies) on different populations of women globally—including highly educated professional women in academia, the sciences, medical, and computer industries, as well as clerical and factory workers in the just-in-time telecommunications and home-work industry, and rural and urban women working in electronic parts factories and assembly sweat-shops. In order to strategize CF practices we must examine the impact of the new technologies on women's sexuality and subjectivities; the conditions of production and reproduction—always already linked for women; gender roles, social relations, and public and private space; and we need to contest the naturalized value placed on speed and efficiency when they take no heed of the limits and needs of the organic body. In the aftermath of colonialism, there are more migrants, refugees and exiles than ever before and many of these migrants are women. As women from developing countries increasingly become the home-service and child-care labor employed by wealthier families - as well as the world's electronic parts manufacturers, assemblers, and data maintenance workers—the lives of women are mutually reliant across divisions of race, class, and nationality. Far from being subjects irrelevant to electronic media and cyberfeminism, these migrant populations are often the result of devastations caused by the interventions of empire. We must begin de-colonization in our own networks and embodied relations. CF must also research, critique and contest developments in bio-genetic technologies that will profoundly affect environmental and human futures. Cyberfeminists could spearhead activism and education about Advanced Reproductive Technologies (ART), transgenic crop production, stem cell technologies and cloning, and new eugenics practices, to expose how profoundly traditional concepts of women's bodies and gender roles are implicated in the deployment of these technologies. bell hooks' definition of feminism proposed almost two decades ago remains relevant to cyberfeminists. In her words, feminism "is not simply a struggle to end male chauvinism or a movement to ensure that women will have equal rights with men; it is a commitment to eradicating the ideology of domination that permeates western culture on various levels—sex, race, and class to name a few- and a commitment to reorganizing US society so that the self-development of people can take precedence over imperialism, economic expansion, and material desires." (2)

2. RG: How does subRosa's theory and practice fit into this schema?

sR: At present (2003) subRosa consists of five new genre artists who produce our projects. For our book, *Domain Errors! Cyberfeminist Practices* (available from <http://www.autonomedia.org>) we collaborated with cultural theorists and postcolonial scholars Maria Fernandez and Michelle Wright, and invited the participation of contributors from different countries and fields of cultural and technological research and practice. We are currently beginning a new collaborative project *MatriXial Technologies* with a group of artists, scholars, and researchers in Singapore including Irina Aristarkhova, Margaret Tan and Adeline Kueh. The project concerns itself with mapping global flows of

human tissue and bioinformatics, and the varying meanings and effects these have on different populations of women. sR practices an embodied "female affiliation" of welcoming, solidarity, and inclusion. For example, when we are invited to do a project, organize a panel, or speak at a conference, we try to extend that invitation to include women with different experiences and views whose voices have not been heard, or who do not usually travel on the circuits that we travel in. Our activist art practice is cyberfeminist because it is based on a contestational feminist analysis and critique of the effects of digital (cybernetic) information, communication, and biotechnologies on women's material lives, bodies, work, and social relations. subRosa consciously tries to embody feminist content, practices, and agency within the electronic technologies, virtual systems, and RL (Real Life) spaces, which we inhabit in our work and lives. We consciously politicize and problematize how both the content and form of our work and social relations are mediated by digital technologies.

3. RG: Since subRosa has been addressing different aspects of science and technology, which are now harder to separate than ever, what areas have become important targets for the group to critique?

sR: One big area is always the language and practices of science and of commodified biotech. Thus, for example, we have critiqued the appropriation of the feminist notion of "choice" to support commodified development of ART's (Assisted Reproductive Technologies). We also point to the ways in which the promissory language of science and of many new medical and genetic technologies work to naturalize the new uses of biology in genetic and transgenic food and medical production. For example in the area of cloning and stem cell technologies (which is what we are looking at right now) there is an incredible hype going on that uses words such as "magic" "immortal" and "totipotent" to describe various kinds of stem cells. There is also the promise of "putting death to death" of "rejuvenating" and "revivifying" organs, aging bodies, and the like, not to mention "saving lives" and "extending life indefinitely." Then, we are also very concerned with capitalist science's practices of privatization of intellectual property, knowledge production and life tissues, as well as of patenting life materials and biological processes. We have talked with scientists and lab researchers in both private commercial (corporate supported) and academic (usually also corporate supported) institutions and have often heard them complain about the constraints that privatization and patenting put on their research and the exchange of knowledge and materials with other scientists. But for the public (as guinea pig and eventual consumer) these are crucial issues of concern that need to be acted on. However, most people don't really understand what is involved and have long since given up trying to keep up with what science is developing. This is where we can intervene as contestational artists and activists who are willing to do the necessary research work to be able to involve the public in a different kind of understanding and experience of these biotechnologies than sensationalized or overly technical scientific reporting can.

For sR a central concern is also the ways in which biotech and various digital technologies affect the lives, livelihoods, bodies, roles, and subjectivities of women in different ways than they may for other sectors of the population. The bodies of women have literally become parts-supply and production laboratories for many aspects of the repro-tech, stem cell and cloning biotech industry. For example, lab culture fluids (also known as matrixes) are sometimes made to resemble female reproductive tract mucus by adding cells from women's fallopian tubes and uteri. For ART, cloning and stem cell technologies pregnant women are now routinely being approached and advised to have their babies' umbilical cord blood collected and cryogenically stored as an eventual

source of stem cells that may one day "save the whole family." Or, as in ART, asking women to donate super-ovulated eggs or "excess embryos" for therapeutic stem cell research. But new biotech and genetic engineering affect women a lot in other ways too, for example in food production and subsistence farming, which is still done mostly by female labor in many countries. Gena Corea, in *Man-made Women*, cites the example of the Green Revolution in India, where new farming technology deprived millions of women of a living and of their traditional agricultural work. This led in many cases to further devaluing of women and consequently to increased infanticide of female children, or of sex-selective abortions after amniocentesis. (Presumably many of these women who lost agricultural work went into high-tech assembly plants or emigrated to other countries to become domestic workers).

In sR's experience, attitudes and beliefs about sexual difference are often a suppressed but important element in scientific research and in the way various technologies and scientific processes are deployed. We need to research this much more.

Then, finally we are also interested in questions of difference and of the division of labor when it comes to scientific research and digital technologies. For example, we did a project for n.paradoxa examining the "Economies of ART" in which we looked at the integrated circuit of workers and knowledges that go into "making a baby" with ART.

4. RG: subRosa counters the often exploitive aspects of the "high tech gift economy" with what you called "embodied 'female affiliation'". Some people may find this essentialist in assigning a gender to the practice, especially given the residual power of gender bending cyber-theory, but Critical Art Ensemble has spoken of the need for "tactical essentialism" in order to create resistance. Does this become an issue for the group?

SR: It might be more accurate to say that subRosa counters the often exploitative aspects of the digital info-, bio-, agri-, and repro-tech industries, with a gift economy of embodied female affiliation. In other words, we hope to challenge the axiomatic of global pan-capital, in which the value of all life--from the molecular to the macro level--is understood solely in relation to its potential to maximize profit. It is rather the instrumental reduction of all of life under the current order that is the true essentializing machine. We hope to understand through our practice, in detail and with specificity, how this is effecting and affecting every day life. An embodied tactical practice of female affiliation opens onto fields of immanent possibility. For example, by asking, who makes these computers (where are the actual female bodies within the metaphorized 'matrix')? we immediately are confronted with a whole series of important questions. By forming resistant alliances and networks based on contingent possibility rather than fixed ideology, and asking "what can we actually do, here, now, together? can we work together in a way that avoids crushing difference?" many tactical artists and activists today are making important steps in countering the transcendent machines of alienation and exploitation. Our use of the strategy of female affiliation derives in the first place from the important theory and writings of Luce Irigaray who applies the term to affective (emotional), political and even spiritual practices. And of course it is also crucially related to Gayatri Spivak's writings about Subaltern Studies, in which she develops the idea of "strategic essentialism." (from which no doubt the term "tactical essentialism" is derived). In her book, *Essentially Speaking*, Diana Fuss explains Spivak's terms this way: "Spivak's simultaneous critique and endorsement of Subaltern Studies' essentialism suggests that humanism can be activated in the service of the subaltern; in other words, when put into practice by the dispossessed themselves, essentialism can be powerfully displacing and disruptive. This, to me, signals an exciting new way to rethink the problem of essential-

ism; it represents an approach which evaluates the motivations behind the deployment of essentialism rather than prematurely dismissing it as an unfortunate vestige of patriarchy (itself an essentialist category)." (p. 32)

sR's deliberate revival and re-deployment of the practice (and naming) of female affiliation is primarily a strategy of welcoming and hospitality (as outlined by our friend and collaborator Irina Aristarkhova), as well as an attempt to address the ways in which we are consciously trying to discover and live our differences and the meanings that they produce - culturally, socially, politically. We suggest that Irigaray's important thinking about sexual difference was often misread in 80's anti-essentialist feminist theory (whose denial of essence is quite essentialist) that was almost phobic on the subject of essentialism. With the result that complex political, tactical, and practical ideas of feminists like Irigaray, Audrey Lorde and others have been condemned by different groups and often misrepresented or completely suppressed. Irigaray's insistence on female affiliation, of women-among-themselves, addresses the lived reality that women have had, and still have almost everywhere in the world, very different subject positions than men (if they had any at all, that is) and that they must work from this difference to begin to establish a sense of what not-male (also not-white, not-dominant, etc.) might be. What could women be if they did not constantly think of themselves as either dependent on, or in competition with, or in opposition to, men, but rather as different but complete in themselves and with themselves? Irigaray eschews "equality feminism" as a false goal, she says: "women must of course continue to struggle for equal wages and social rights against discrimination in employment and education, and so forth. But that is not enough: women merely 'equal' to men would be 'like them,' therefore not women." (This Sex Which is Not One p. 165-66) The world exists because of difference, not sameness, and only if difference is recognized and allowed to unfold fully can we have rich, various, productive life. The long, deep habits of patriarchy have seen to it that sexism, racism, and domination are so deeply embedded in language and culture that they are invisible and naturalized (they've become guiding mythology). If we do not insist on practicing and speaking female affiliation it will not exist in consciousness - and thus also not in every-day life where it can become productive. It should be noted that "affiliation" is based on a Latin term derived from adopting a son or daughter (filius or filia). Female affiliation in practice means recognizing, welcoming and acknowledging women in all their differences in public speech, in all written language, in embodied space; it is a resistant act that contests embedded mythologies of human universalism and sameness.

A word on cyber gender-bending: This has been overcoded as liberatory and transformational. Embodied gender-bending is usually a lot more risky and often harshly punished. Cyber gender bending is strongly associated with early cyberfeminism which contributed importantly to this genre and opened up vital discourse. However, it is hard to see how much further this can be pushed in the virtual media and meanwhile many difficult problems of unequal access and repression in digital terrains still remain and need to be addressed. We agree here with Anna Munster that these are issues which feminism(s) can address.

5. RG: What have been the most significant sources of resistance to the group's constestational theory and practice? And where have allies formed in cultural, scientific, or other sectors?

sR: We have often had criticism from women (often feminists) and couples considering using (or already having used) processes of ART (Assisted Reproductive Technologies)

and who believe that sR as a feminist group has the responsibility to support women's choices whatever they may be rather than critiquing them. To this we respond that we have never taken the position of judging individual women or their choices. However, we certainly have critiqued the implied (and actual) eugenicism of ART along with embedded assumptions of universal desire for motherhood, and the utopian and promissory language in which its (still experimental, often dangerous, very expensive, and only marginally successful) procedures are couched. We have critiqued the advertising and informational ploys of corporate ART that play on women's insecurities and desires by appropriating the feminist rhetoric of "choice." We have also suggested that resistance to corporate "solutions" to infertility can take the form of adoption, child sharing, low-tech medical and fertility treatments, a gamete commons, and getting rid of the idea of genetic essentialism--i.e. parents desiring only offspring with their own genes or with hand-picked purchased genes. Of course we've also encountered skepticism and even hostility from doctors who see us (amateurs) undercutting their (expert) markets. One female gynecologist told us that she thinks it dangerous for young women to go through super-ovulation in order to donate eggs, but that the clinic she works for is of course in dire need of such eggs and therefore actively encourages young women to consider these procedures through advertising that for example asks women to consider giving "the gift of life."

We have had a lot of positive responses to our work both from different publics - including students, academics, activists and tactical media practitioners, feminist, and general audiences - as well as from feminist health workers, doctors, and people from countries in which these issues are usually not discussed so frankly, or so critically. Most of the scientists we have talked to are intrigued and interested and we have received many offers of help and collaboration. So far, to our knowledge, we do not seem to have antagonized or scared the corporate sector. So we need to work on that.

6. RG: Feminist voices often seem missing from technological debates, or maybe suppressed is more accurate. Rosalyn Deutsche has pointed out the authoritarian and masculine desires within the language of resistance itself that seeks to suppress the gendered voice in favor of a mythical cohesive public sphere. Have subRosa's experiences revealed a similar tendency within biotech resistance theory?

SR: One must ask: What is the public sphere anyway? There are so many discourses that are repressed in it. It is not surprising that feminist and minoritarian voices continue to be suppressed in technological and biotech debates since these areas are so intensely male coded. However, many feminist and minoritarian voices are critiquing new media art, information and communication technological theory and applications, and biotech theory and practice as well - Vandana Shiva is only one example of these. There is a lot of resistant work - both practical and theoretical-- going on in India and Africa for example, that contests biopiracy, biopatenting, and the production and consumption of transgenic and genetically modified crops and animals. Those of us living in the US and Western Europe need to work much harder to ally ourselves with these movements and voices because they are actually resisting much harder--and sometimes more successfully--than we, the corporate biotech takeover of their genetic commons and agricultural heritage. There is a strong Genetic Commons initiative coming out of Porto Alegre's World Social Forum and this needs our active support. Corporate strong arming techniques being applied in various countries in Africa and Latin America are of course related to those happening among farmers right here in the US. US art activists and biotech tactical media artists are generally not paying enough heed to what is going on under our noses

in regard to how farmers are being coerced by agritech conglomerates to adopt exclusive contracts to grow patented and proprietary biotech crops or to convert to factory farming of animals. This puts farmers in impossible positions and is once again fundamentally changing the nature of all agriculture and food production in the US-including organic farming.

It takes a great deal of research and perseverance to find out about many of the initiatives and actual tactical projects of resistance that are going on locally in different countries - they do not tend to be presented at new media festivals in Europe or the US. Many of the people engaged in these activities do not think of themselves as artists or even activists. They are struggling for survival. Often they are under intense threat from the corporate sector they are contesting, and their resistance to adoption of biotech or high-tech products or methods may be in direct opposition to deals their governments are trying to make in order to get loans and technological assistance and investment in their countries. Thus, such resisters are doubly threatened from both within and without and their work is suppressed and silenced at every turn.. subRosa is interested in finding out about the tactics of such resistance, supporting it, learning from it, and engaging in it ourselves in whatever way we can through our own projects. We've started a project called Refugia BAZ (Becoming Autonomous Zones) in which we would like to feature such resistant projects and to collaborate with people from whom we could learn, or to whom we could be of help.

7. RG: Many in the "New Media" community are aware of the practice of the Electronic Disturbance Theater and Ricardo Dominguez's work with the Zapatista struggle (1) that desires to expand the uses of technology to Southern struggles against pancapitalism while also learning from them. You mentioned the "Refugia BAZ" project, could you discuss that project and what its context is?

sR: Our Refugia BAZ (Becoming Autonomous Zones) differs in many ways from the EDT projects you mentioned, but we don't have room to discuss this in detail here. sR is not so much focused on expanding uses of technology, as we are on trying to find out what technologies people already are using, how they are using them, and what the effects of this usage are - we focus on a pedagogical and consciousness-raising approach. So far we have not focused our projects on a particular activist group or political campaign, though we are in solidarity with many such groups and would help them in any way we could. We often use different - often fairly low-tech - digital technologies in our projects and we are very conscious of the ways in which different groups in different countries use a mixture of traditional and new technologies extremely inventively to suit their purposes. This is truly tactical media at work. For example, the way radio is used in many Latin American countries is quite different than its use in the US. Print media like wall posters, billboards, photo-novelas and street comix also have a very different status still as important communication devices. Refugia - see the BAZ manifesto on our web page <<http://www.cyberfeminism.net>> - is a series of modular projects that generate and explore political, cultural, and ecological aspects of "Refuge." Modules can combine participatory live performances, interactive WEB works/installations, workshops and residencies in colleges and communities, as well as radio, video, digital, and print production. REFUGIA* is an open framework that provides spaces to imagine and create critical models of cultural contestation and creative intervention. It comprises a feminist BAZ 'tool-kit' [with material and digital components] for activist projects and proposals. (*REFUGIA is: "A center of relict forms from which a new dispersion and speciation may take place"; a specific reserve for non-transgenic crops within biotech agricultural fields; an asylum for political or dissenting persons; and a critical space of autonomous social

becoming and practice for contestational action.) The project will last from approximately March 2002-December 2004. So far we have done several projects within this framework, including the "Grade AAA Eggs" and "Biopower, Unlimited" projects at BGSU, Ohio; MatriXial Technologies (in progress) in collaboration with Singapore; "International Markets of Flesh" Mexico City (July 2003); and U-Gen-A-Chix (provisional title for performance at Southwest Missouri State University, October, 2003).

8. RG: I'm interested in the mode of production sR practices, moving the group throughout the US and various other locales, like the recent collaboration in Singapore. As someone who is always moving and making as many (if not more) contacts through online and "away from home" situations myself, the mobility of a lot of tactical/contestational media seems "second-nature". One of the long-standing dictums of contestational practice, even before the "Battle for Seattle", is that "resistance must be as mobile as capital," but this form of work usually requires substantial capital itself. How does sR relate to this global mobility and distribution of cultural activity?

sR: You bring up a somewhat sore point with which we wrestle daily. On the one hand, we are committed to local, embodied work and action. On the other hand the reality is that (as of Fall 2003) we are living in 4 different cities and are doing our projects wherever we are invited to do them. It is important to note that for many people - refugees, migrant workers, historically nomadic people, for example - mobility is a necessity, while for others (Euro and US activists, artists, academics, CEO's, etc.) it is a privilege: For example, not everyone can afford to fly to Cancun or Porto Alegre to "resist." So far our projects have ranged from Singapore, to Europe, Mexico, and many places in the US. We are interested in expanding our audience and also in working in non-Western countries because we learn so much more and we are dealing with subject matter - such as biotech, women's health, labor issues - that are burning issues everywhere and that connect women all over the world in very new ways. The MatriXial Technologies project for example, is about tracking and mapping the global flows of human tissue in the form of stem cell lines and cloned embryos, and looking at what the implications of these new distributed global bodies are. So we are looking at these other forms of globally distributed bodies and body parts. In our Mexico project, International Markets of Flesh (IMF) we are looking at the same issue through the example of organ procurement and transplantation, and connecting it to exchanges of laboring and reproductive bodies across borders. These are very big and complex subjects and require a great deal of research. MatriXial Technologies is a good example of our working process. We started with a two-week subRosa residency in Singapore where we worked every day with our collaborators, Irina Aristarkhova, Margaret Tan and Adeline Kueh. We visited umbilical cord-blood banks and embryonic stem cell cloning labs and interviewed doctors and scientists about their work. We also visited the largest women's hospital in Singapore, met with gynecologists and obstetricians there, and were informed about the different ways in which women from different ethnicities are treated when they give birth. We also were toured around the intensely technologized environment of the ICU for premature babies and were able to discuss the uses of these "life-saving" technologies with nurses and interns. We conducted workshops on "Cloning Cultures" in the art school and also took part in a symposium on art and science at the National University of Singapore. Subsequently, we have conducted workshops in Chicago at Version>3 Festival and plan one in Amsterdam for the Next Five Minutes Festival. This project is going slowly because of the necessity of collaborating across such huge geographical divides, and because we need to take a lot of time to work out our differences of opinion and

approach to the subject matter and to production. We are planning eventually to produce performances, print and graphic material, videos, maps, and possibly some interactive installation work. Fortunately, we received a grant from the Creative Capital Foundation that has been really helpful toward funding this preliminary work.

It is clear that sR works situationally and that this slows us down quite a bit. It also means starting anew with each different project. But we are beginning to pull together as quite an efficient team and are finding that we can adapt much of what we produce in one project to other situations. Mostly our funding comes from the places that invite us and we have luckily had a few grants. However, we regularly contribute personal money to projects that interest us for which there is no, or little, funding. All of us have full-time day jobs and some of us cannot afford to take much unpenalized time off from them for our work and for our travel to presentations. However, as you point out, it seems to be our current condition that in order to be active in the world it requires travel. In the scope of things we realize that just to be able to do as much (mostly subsidized) travel as we do is a real privilege. At the same time, the amount of money and resources we and the art world in general use up is quite small when compared to most research work - especially that in the sciences or marketing. We hope that the meaning of the work we do compensates for the expenditure in resources that it requires.

9. Going back to what you said before about the appropriation of "choice" by the reprotect industry, similar forms of appropriation by other biotech industries have been criticized by environmental and agricultural activists as "greenwashing" and "playing the hunger card." As Francis Lappe and others have pointed out, the promise of GMOs to feed "the hungry" and reduce the use of chemicals are some of the more insidious and widely used. Despite the vast collection and publishing of data revealing that hunger results from lack of distribution, not production, while the majority of GMO crops are designed to use more pesticide (Monsanto's Round-Up product-line being the most blatant), the discussion has been following the path of the global warming debate, i.e. an ideological battle overwhelmed by industry-led organizations creating massive PR campaigns to misrepresent criticism. I would imagine that the discussion of reproductive technologies becomes even more ideological, when it's even discussed at all, due to the history of reproductive rights struggles here. Many of the activists I know are involved in fighting transgenic developments, and do not often seriously consider the ramifications of genetically assisted reproduction, or how the desire for the technology is being created. At the same time, the issue seems off the radar for most pro-choice advocates. Which is one reason why sR's work is so vital, in my view. How is the rhetoric of "choice" shaping reprotect, and how does Sr, through projects like "Expo Emmagenics," attempt to redirect the debate?

SR: As you are probably aware, we wrote a long article on this subject called "Stolen Rhetoric: The Appropriation of Choice by ART Industries. It is included in "Domain Errors!Cyberfeminist Practices", a subRosa book now out from Autonomedia Books (July 1, 2003). Here is a taste of it from the Introduction and Conclusion:

(Introduction)"Biotech industries currently expanding globally, but especially in the U.S., have opened new frontiers for colonizing bodies - and commodifying and patenting life—at the molecular and genetic level. Gamete harvesting and freezing, In Vitro Fertilization (IVF), Intra Cytoplasmic Sperm Injection (ICSI), pre-implantation embryo screening, and genetic manipulation of embryos, are just some of the new techniques transcending previous limits of reproductive intervention that have profound repercussions for human genetic heritage. Under the guise of optimizing reproduction - and

"improving" human beings - ART (Assisted Reproductive Technologies) are rapidly being naturalized in every day life. As feminist theorists have pointed out, the new biotech reproductive order has territorialized the female body as a pre-eminent laboratory and tissue mine for a lucrative medical/pharmaceutical industry (2).

The women's liberation movement of the early '70s formulated a politics of women's autonomy and control over their sexuality and reproduction that included the right to safe contraception and abortion. By the late '80s, after almost two decades of abortion wars, the politics of autonomy and liberation had been transformed into a rhetoric of "choice" typified by the slogan: "A woman's right to choose", which became identified with the pro-choice movement. Since then, the rhetoric of "choice" has become firmly associated with reproductive liberalism.

Using strategic marketing, a seductive consumer industry intent on normalizing ART in every-day life has appropriated the rhetoric of "choice" in order to appeal to a broad constituency of progressive consumers ready to produce "children of choice." Marketers of new reproductogenic technologies (Reprotech) were quick to capture this rhetorical territory, cashing in on the expectation that it would appeal to liberal, educated, middle class consumers schooled by feminist activism to be proactive in personal health care. ART industries, principally driven by profit making motives and embodying eugenic ideologies, have recuperated the politicized rhetoric of "choice" only by concealing a deeply embedded conflict between the macro politics of rationalized reproduction in late capital and a micro politics that capitalizes on individual desires.

Despite the highly invasive and risky body processes of ART, many feminists have explicitly welcomed the development of Reprotech for its promises of an expanded range of reproductive choices for women. Others have recognized that Reprotech represents not only an ultimate form of body colonization, but that its practices and ideologies reinforce patriarchal systems of scientific and medical authority, control, and rationalization of reproduction - contradicting feminist philosophies of women's autonomy.

(Conclusion) The micro and macro politics of the public discourse of ART are unbalanced; currently the forces of market capitalism have won the field with the consumer friendly appropriated rhetoric of "choice". Research in assisted Reprotech is still advancing rapidly, and increasingly there are contestatory interests at stake. An ever-growing body of feminist cultural theory and literature, as well as new media practices and art works play with concepts of the cyborg body and recombinations of women and machines. The '80s saw strong feminist activism, both in the U.S. and internationally (groups such as FINNRAGE), that critiqued and opposed new Reprotech using many classic activist feminist arguments and tactics. But currently there is a wide gap between academic theory and activist (radical) feminist practices in the domains of biotech and ART. (Cyber)feminist artists working with these domains must expose the ways in which the marketing of ART promotes the colonizing interests of late capital, rather than the critical goal of women's autonomy.

New developments in ART, genetics, and biotechnology, are constructing new rhetorics and practices. This places critical artists who desire to counter the recuperation of political and cultural rhetoric by a consumer economy in a quandary. On the one hand they must learn enough about the new biological science to understand its implications and risks; on the other, they must maintain a critical stance and create a non-specialist public discourse that debunks the capitalist propaganda of corporate biotech. One way to do

this is through cross-disciplinary collaborations of artists, scientists, doctors, and health practitioners, in which expertise is shared to create a participatory discourse. Rather than producing aestheticized representations or objects celebrating biotech (as many artists are now doing), such collaborations involve participants in a critical and pedagogical process—an information theatre - in which they can develop informed, critical responses based on actual learning and experience.

The challenge for feminist activist/artists is to create strategies to deterritorialize biotech's control of the female body. In *Women as Wombs*, Janice Raymond suggests separating science from technology in order to create a new feminist science of reproduction that doesn't depend solely on risky high tech solutions (3). (This is not because of technophobia, but because it is the money to be made off technologizing of science that attracts the interests of capitalist entrepreneurs). Such a science would recombine diverse sources of knowledge, and interdisciplinary practices, to create wholly new solutions that take into account women's differing conditions and desires—and it would be based on a criteria of what is good for women's autonomy. New feminist reproductive science would have to devise a workable distribution mechanism, perhaps based on a combination of electronic networking and performative practices. As in the autonomous method of menstrual extraction practiced by lay people (and bypassing the medical authority system), new approaches to reproductive science could enlist feminist activists as informed, non-specialist practitioners using methods that foster principles of autonomy and embodiment.

subRosa has activated a resistant cultural practice based on the goals discussed above. Initially, we have focused on aspects of ART that have largely been silenced in public discourse. We hope to disrupt the current "choice" discourse of ART; to initiate an interventionist debate and practice among diverse non-specialist audiences; and to further probe and expose biotechnologies' far-reaching repercussions for women's health and bodily autonomy worldwide. Following is a brief listing of subRosa projects on ART to date: 1) "Does She or Doesn't She", "SmartMom", and "Vulva De/Reconstructa" expose gender differences in ART practices, and highlight the effects of high tech body invasion on women's health and bodily autonomy. 2) "Expo EmmaGenics" and "The Economies of ART" question and challenge the ways in which market forces drive the research, development and deployment of Reprotech's products and 'services' through an analysis of the economies of ART; and 3) "Sex and Gender Education in the Biotech Century" interrogates the intersecting ideologies and practices that serve to normalize and naturalize ART, exposing their historical connections to eugenics and colonial ideologies.

1) Much of this interview contains material from Maria Fernandez and Faith Wilding, "Situating Cyberfeminism(s)," the introduction to *Domain Errors! Cyberfeminist Practices*, a subRosa project, Autonomedia Books, 2003.

See also: "Where is the Feminism in Cyberfeminism," (Faith Wilding, *n.paradoxa*, No. 3, London, 1999); "Notes on the Political Condition of Cyberfeminism," (Faith Wilding and Critical Art Ensemble, *CAA Journal*, NY, Summer 1998).

2) Bell hooks, *Ain't I a Woman: Black Women and Feminism* (Boston:South End Press, 1981), p. 194-195.

THE TACTICAL AND THE TECHNICAL

“ We do not have an adequate language with which to understand and articulate the presence of technology in culture, society and politics. We are accustomed to construct utopian and dystopic technological imaginaries, even as we neglect the task of a sober and considered reflection of the ethical and cognitive dilemmas that the presence of technologies in everyday life confronts us with. And even as technology becomes increasingly ubiquitous, even as it touches wider populations, even as an immersion in technoculture becomes the condition of the contemporary moment, it becomes simultaneously the discursive monopoly of experts and specialists or of geeks and hobbyists, far removed from the concerns that animate scholars, public intellectuals, and the common curious person.”

- from the introduction to the Sarai Reader 03: *Shaping Technology* -

Specific forms of technology enable and constrain specific possibilities of use. Technology is never neutral, it is never matter of fact. It is constructed with an in-built agenda that is most often informed by economic and political interests, but it is also invested by a host of implicit cultural assumptions. Mainstream technology developers will, however, more often than not deny such issues, and instead present a naturalised image of technology: technology as a fact and force of nature. Tactical Media makers have therefore always concerned themselves not only with the use of existing media technologies, but also with the construction of technology itself. Uncovering the implicit politics and cultural biases of media technology is one critical practice we want to highlight here. The necessary complement to that is people building their own tools and infrastructures, shaping their own technology that fits with their particular singular agenda's and politics. The technical is therefore a vital aspect of the tactical in the contemporary media ecology.

NOTES ON THE POLITICS OF SOFTWARE CULTURE

By Andreas Broeckmann, August 2003

Software has, over the last few years, increasingly come into view as a cultural technique whose social and political impact ought to be studied carefully. To the extent that social processes rely on software for their execution - from systems of e-government and net-based education, online banking and shopping, to the organisation of social groups and movements -, it is necessary to understand the procedural specificities of the computer programmes employed, and the cultural and political 'rules' coded into them. The 'killer apps' of tomorrow may, as Howard Rheingold claims, not be 'hardware devices or software programs but social practices'. Yet, these social practices will increasingly be determined by software configurations of the available infrastructure and the degrees and types of latitude that they offer. Aspects of software culture - a terrain that encompasses software development as well as the wide and multi-faceted field of software application - are being articulated by speculative and artistic software projects which this text will try to cover in a necessarily cursory, introductory fashion.

The term 'social software' has been used by Matthew Fuller, Graham Harwood, and others, to describe a type of software that consciously engages the social aspects of its application. Whereas a programme like MS Word, which Fuller has carefully dissected in an extensive analysis, tends to conceal the rules and assumptions that served to constitute its structure, social software addresses the more or less specific social context of its application, whether in the form of the Linker software by Mongrel that offers an easy-to-use functionality for multimedia production, or in the online communication platforms that support, for instance, collaborative software and media development and that can easily be tweaked to meet the requirements of a certain co-producer community.

For almost a decade, the Nettime mailing list has been an active, international forum for the discussion of software-related cultural and political issues. In a seminal essay posted on Nettime, *Behind the Blip*, Fuller talks about key aspects of social software and also refers to the Californian researcher Ellen Ullman who has worked on software development as a distinctly social practice for several years. Important practical and theoretical work in this field has also been done by the Amsterdam-based Society for Old and New Media, De Waag, whose software development projects have engaged the needs and possibilities of different user groups by way of models for a 'participatory software design'. In cooperation with De Waag, the New Delhi-based media and communication centre Sarai has also worked on both the practical issues of social software development, and on the critical reflection of software culture on their online Reader-List and in the Reader print publications. While Nettime has often carried postings articulating differences between European and US media cultures, Sarai has, importantly, helped to raise awareness for the differences in software cultures, esp. with regard to developments in South Asia.

In his essay, *Behind the Blip*, Fuller distinguishes social software from 'critical' and 'speculative' software, critical software being 'software designed explicitly to pull the rug from underneath normalised understandings of software'. It critically engages with existing software programmes and mutates or critically analyses them. In contrast, 'speculative software' comes closest to what can be understood as an artistic approach to software: it is, as Fuller writes, 'software that explores the potentiality of all possible programming. It creates transversal connections between data, machines and networks. Software, part of whose work is to reflexively investigate itself as software. Software as science fiction, as

mutant epistemology. Speculative software can be understood as opening up a space for the reinvention of software by its own means.'

The notion of 'software art' has recently made the rounds. It is an attempt to describe a practice that is artistic, non-functional, reflexive and speculative about the aesthetics and politics of software, and that takes computer programming as the material proper of the artistic practice. The Berlin-based media art festival *transmediale* has been holding an annual competition for software art since 2001, looking especially at works of generative art whose main artistic material is program code, or which deal with the cultural understanding of software. Thus, software is not understood as a functional tool serving the 'real' artistic work, but as a generative means for the creation of machinic and social processes. Software art, in the understanding of researcher, software activist and co-editor of the *Nettime Unstable Digest*, Florian Cramer, can be the result of an autonomous and formal creative practice, but it can also refer the cultural and social meaning of software, or reflect on existing software through strategies like collage or critique.

Like *transmediale*, other exhibition and curatorial projects (*Generator* in the UK, *Kontrollfelder* in Dortmund/D, the Ars Electronica's *CODE* festival, the exhibition 'I Love You' on computer viruses, a.o.) have sought to circumscribe a field of artistic work that deals with the aesthetic potential of software. Most notably, the festival *Read_Me* (Moscow and Helsinki) has been exclusively devoted to software art and has led to the establishment of the *Runme.Org* collaborative online database for software art projects. The *CODEDOC* project has presented software developed by artists and has included comments and documentation of the programming process and has thus attempted to introduce an aspect of transparency and the idea of Open Sources into the discourse on software by and for artists, an issue which is also being addressed in discussions about 'open content' and the 'creative commons' licenses for artistic productions. In contrast, Free Software developers like Jaromil, who is pursuing a.o. the *MuSE* project for a free audio streaming software, insist on the necessity to resist proprietary licensing models altogether.

It is worth noticing that the Free Software and open source models have increasingly also influenced art-related software productions in independent labs like the *V2_Lab*, the Ars Electronica Center or the MIT Media Lab. The copyright issue, which Georg Greve, president of the Free Software Foundation Europe, suggests should not be referred to as 'Intellectual Property Rights' but as 'the question of industrial control of information' will become crucial for the information and knowledge society and must be addressed experimentally in the arts and culture sector, like in the recent exhibition *Illegal Art* which presented some of the ridiculous results of tight copyright laws.

The issues of interface design and interaction have been among the prime concerns of digital art production, yet, while software has mostly been treated as a tool towards realism in virtual environments, software art projects like *I/O/D's Webstalker*, *Jodi's Wrong Browsers* or Joan Leandre's *retroYou R/C* have offered irritating and enlightening insights into the construction of digital realism by means of software.

The Internet, while accelerating the demise of utopian hopes once invested in its liberatory potential, has also become the site of a multiplicity of collaborative forums, whether on mailing lists, Wikis, in weblog communities, etc. For the Net in general, software developments around Java, the Linux system, and online publishing forums like *Slashdot* or *Freshmeat*, have all had shares in a complex and vibrant cultural development. For software art in particular, a.o., the *eu-gene* and *linart* mailing lists, are continuing to play an important role. The social and theoretical implications of these kinds of online cooperation have been investigated by projects of the interdisciplinary artists group

Knowbotic Research for over ten years, most notably in the IO_dencies series in the mid-90s, but also in the more recent collaborative hacking projects.

Similarly, the Italian EpidemiC collective explores new forms of software based online activism in their Anti-Mafia project.

Collaborative and activist projects like these frequently also involve debates about network security, ironically referenced by Technology To The People's Phoney(TM), and about privacy issues which were tackled by LAN's Tracenoizer project and, more recently, by Franz Alken's Machines Will Eat Itself, both of which instigate a deliberate erosion of relations between human individuals and their online data bodies.

If anything, software art projects like these should indicate the necessity to delve more deeply into the cultural specificities of software development and application. Software needs to be understood as a set of digital media which need to be explored regarding their specificity, their political and cultural dimensions. An immense amount of know-how already exists in the open source and free software development communities, as well as in hacker and art coder circles. It will be crucial to devise ways how this know-how can be interwoven, at times pooled, and exploded across the entire field of software development and usage. Finally, a 'planetary' project worth recommending!

Note: For reasons of brevity, there are hardly any references in this text; most things can easily be found through Internet search engines. Otherwise, I'm happy to help in locating sources: ab@transmediale.de

THE REVENGE OF PRINT

By Alessandro Ludovico

In the wireless era, is the paper medium simply passé for the work of activists? Are zamizdat, fanzines and political magazines just good for historians? After the mid-nineties zine crisis due to a sudden rise of the cost of paper and the advent of the Internet, the actual role of magazines seems to be re-defined and still strategical for the circulation of ideas.

THE DEATH OF PAPER DIDN'T HAPPEN

At the beginning of the 20th Century, the death of paper was predicted [1]. It was forecasted just after the advent of public electricity networks and the consequent spreading of new revolutionary media, like the radio and the telegraph. The innovation impetus induced the hypothesis that the electrical transmission of the voice would make an end to the printed distribution of information, replacing magazines and books with the faster voice that was transmitted through the air and (mainly) over cables. The future seemed to be with wires everywhere that would have spread the content of libraries to every home or to public spaces with some sort of kiosks and primitive headphones attached to all these receivers.

Half a century later Marshall McLuhan forecasted a similar process [2]: "the book [is] an increasingly obsolete form of communication.", because of its slowness compared to television. In the late fifties it was a question of speed, of changing perception of time and

space, and the printed medium seemed to be much too slow to diffuse and consume information. Finally, the end of paper was one of the worst prophecies in the eighties, at the beginning of the personal information age. The pc marketing figured out the dream of a 'paper-less office', with massive magnetic archives that would have replaced a huge amount of paper. But all of this simply didn't happen. What is more: paper and the printed medium at large have significantly contributed to the spread of new media culture and consciousness. So paper is here to stay. And no shortage of electricity can shut off a printed magazine or a book.

SYNERGY WITH THE ELECTRONS

Instead of dying, the paper medium seems to have succeeded in making an efficient synergy with the networked medium. In the eighties, big newspapers started to transmit their European/American editions over the ocean via combined scanner-modem machines, and to print the copies locally. Today this is a cheap option for everyone with a dial-up Internet connection. And many are the possibilities of distributing texts within a network. One is efficiently realized by the Internet Bookmobile project [3]. Founded by Brewster Khale, the founder of the Internet Archive (also known as the 'Wayback Machine'), it spreads electronic texts physically, printing them on demand in front of libraries, schools and museums. Khale uses basic technologies (computer, printer, binder) stored in a van he toured the States with. The Bookcrossing [4] daily business is also creating a free network of exchanging books. Joining a simple mechanism of tracking, everyone can leave a book in a public place that anybody else can pick up, doing the same after reading it. In this case the data network is just the informative infrastructure to ease the free exchange of culture in physical shape among thousands of practitioners. These kinds of efforts are in fact clearly distinguished from the proprietary struggle around e-books and e-papers, which in the end amounts to an attempt to better preserve the rights of the publisher. "Using encryption and watermarking systems, publishers hope to connect every copy of a book with a known person, and prevent anyone else from reading it.", as Richard Stallman noted [5]. Who needs crippled, computer-like devices to be able to read unstable copyright-locked electronic texts? Everyone, instead, needs a free exchange of electronic texts that should generate permanent paper copies with cheap methods of reproduction and circulation.

PAPER LEGITIMATES OTHER MEDIA

Today, paper also seems to legitimate other media, such as television or the web. The time and the effort needed to produce something in print, contribute to make it more trustworthy and meditated, compared to the immediacy of realtime written text. But also web parodies, or net-art dealing with fake identities, or even more plagiarist practices are as much recognized as they succeed in deceiving corporate newspapers, magazines and TV news. So print is becoming the quintessential of the web, rewarding the most valuable contents and ideas with the dignity of a medium that has a duplication rate significantly lower than the electronic ones and at the same time is really cheap to access. In the era of 'unstable media', paper is the most 'stable' medium in the complex and fast-changing mediascape.

[1] Octave Uzanne and Albert Robida, 'La fin des Livres' in: 'Contes pour les Bibliophiles' 1895, France.

<http://www.hidden-knowledge.com/titles/contesbib/lafin/lafindeslivres.html>

[2] Marshall McLuhan, 'Explorations 3,' 1955, USA.

http://www.gingkopress.com/_cata/_mclu/_newmed.htm

[3] <http://webdev.archive.org/texts/bookmobile.php#thebookmobile>

[4] <http://www.bookcrossing.com/>

[5] Richard Stallman, 'Can freedom withstand e-books?,' 2000.

<http://folk.uio.no/thomas/po/freedom-versus-ebooks.html>

THE PEOPLE WANT THE AIRWAVES BACK

By Arun Mehta, August 2003

The wireless landscape can be compared to a desert. Here and there the government has sold off pieces of it and on some of them, indeed, oases bloom. One of these spaces that allow controlled entry to citizens, is mobile telephony, where you pay a hefty price to enter and to stay. Other areas are shopping malls – radio and TV seem to be like the window displays of the corporate sector, designed to convince you to buy more. The rest of the airwaves look as barren as a desert, occasionally visited by the bureaucrat and the manager on outmoded equipment.

"The airwaves belong to the people, and now the people want them back," is what Stephen Dunifer, one of the world's foremost radio activists, told me. It might seem that, faced with such powerful adversaries, the people stood little chance. But look again.

The metaphor of the desert is useful in another sense as well, for the good news is that we see some evidence of the noses of the people pushing into the wireless tents of the governments and the corporate sector. Two instances of this are the developments in WiFi and in short-range FM radio broadcasting.

WIFI

The emerging telecom paradigm is one of wholesale and retail. The wholesale consists of mainly large companies or governments that deploy optic fibre cables, with satellites catering to broadcasting, remote areas and niche markets. At the moment, there is a glut in long-distance capacity on many routes, so the profit margins are rather thin. At the retail level, a variety of technologies find room, of which WiFi is the most interesting, from the point of view of the citizen.

This "Ethernet in the ether" technology was originally designed for broadband networking of computers within a range of tens of meters. However, it now works well over kilometers as well.

As in the case of the Internet, a large distance can be covered through several small hops. As such, WiFi presents the most cost-effective method of bringing connectivity to villages in developing countries. Since it can already handle communication speeds in tens of megabits per second, it allows video-conferencing, which would be vital to bringing the benefits of telemedicine and distance learning to the poor.

So, what needs to be done is to ask that the frequencies WiFi uses be delicensed around

the world for outdoor use. This is a good time to push for this, because given the hype over WiFi, our chances of being able to open up this set of bands are good, and so it is worthwhile to invest in this effort.

At the same time, a lot can be done with a little bit of spectrum. We only need to use wireless to get to the nearest optic fibre (or V-Sat), and the lower the power we use- with ever smarter devices - the more throughput we get in a given frequency band. As the band gets crowded, we can ask for more optic fibre to reach ever smaller wireless cells, and also for more bandwidth, but by now we have a constituency clamouring for more.

Indeed, given the availability of technologies that can share spectrum, we can certainly work towards a situation where we do not need government to police these commons. But how do we get there from here? What about all the legacy hardware that people have paid for, which will need replacement? Increasingly, though, the mobile phone is making other wireless sets redundant. WiFi will confirm this trend. As time passes, equipment in many bands will cease to function or fall into disuse, and the spectrum become available for sharing.

What we are unconsciously adopting in using WiFi is the classic camel in the tent strategy, which is the most effective in the kind of desert the wireless spectrum is.

SHORT-RANGE FM RADIO

For the poor and illiterate, FM radio is cheap enough to be accessible, both transmitters and receivers. Plus, for almost everyone, audio is our most natural way to produce content, from the baby's cry when it is born to our last breath.

FM radio occupies indeed a very important slot in the wireless spectrum, one which is the worst regulated. Being almost the first electronic technology, the two words "wireless" and "radio" have been used synonymously. Regulations governing radio date back to a far more authoritarian era – only now is Indian regulation attempting to distance itself from the Indian Telegraph Act of 1885.

However, bands of international activists continue to fight for the opening up of the air-waves. They fought for the opening up of low-power FM broadcasting before the FCC of the United States, which was inclined to open up this area. However, corporate interests in FM radio were able to prevail with the argument that these low-power transmitters would interfere with their reception.

The FCC asked for a study to be conducted, the results of which can be found at <http://babel.serve.com/mitre/>. They found, when testing 10W transmitters, that there was no interference to commercial radio stations noticeable. Using these results, activists such as Pete Tridish are attempting to move the FCC towards further opening up of this sector.

While effort continues to work within the system, action is not lacking on the streets either. Steve Dunifer and others are calling for a day of electronic solidarity and direct action on October 17, 2003. They are helping people with training camps and information so that they can start their own community radio stations on this day.

The war over wireless spectrum is being fought on many fronts. It is essential for those promoting the opening up of WiFi to support the fight for community FM, and vice versa. For FM radio stations, WiFi can be a way for neighboring stations to share content with each other and widen their reach.

The significance of these battles is immense. For the FM radio movement access to communities and the disenfranchised is the issue. The spread of WiFi holds out the possibility of the spread of the commons into the wireless spectrum, and indeed into telecommunications itself.

REALIZING THE PROMISE OF OPEN SOURCE IN THE NON-PROFIT SECTOR

By Jonathan Peizer

ISSUES TO ADDRESS

Every so often, a technology or protocol emerges that is touted as a "magic bullet" either by the company or consortium promoting it or a core group of enthusiasts using it. Examples of this are WAP, OS/2, ISDN etc... The technology is initially promoted as having "earth-changing" significance that will revolutionize the way things are done. Eventually most of these either fall by the wayside or take their rightful place as effective [but less hyped] mainstream tools in a much larger toolbox of solutions. The problem with the magic bullet approach is that it over-promotes particular technologies and often obfuscating the real benefits they could provide if evaluated and positioned in a more realistic context. For the for-profit community investing in failed magic bullets, the fallout is typically nothing more than an unfortunate R&D decision which can be expensed before moving on to the next IT investment.

When these same technologies create a significant buzz in the non-profit community the results are often different with more unfortunate consequences. When non-profits invest in magic bullet technologies that fall by the wayside or don't meet all the hype, they often don't have the financial resources to write them off and reinvest again. More often in this sector, a bad technology investment leads to a phobia for ever investing in technology again, even if the next underlying technology has merit. Therefore, it behooves people working in ICT for the non-profit sector to manage expectations and not promote a particular technology as a magic bullet.

One of the latest technology protocols to benefit from the magic bullet buzz is Open Source. I am deeply concerned about this because the Open Source methodology does show a lot of promise in helping non-profits take advantage of technology in new ways. In fact it is happening as I write this article. The idea that applications can be licensed to use or modify freely has a very powerful attraction. The Open Source methodology is certainly a viable choice for some of the technology I use, recommend and fund. However, I don't see it as a magic bullet that will revolutionize the software development and deployment process for non-profits as some pundits do - At least not unless it's dealt with in a far more strategic and realistic context by civil society actors.

Open Source speaks to the ideological biases of the non-profit environment. This makes people prone to buy into it without deeper analysis of the peculiar dynamics of this sec-

tor's use of ICT. Chronic underinvestment in capacity skews successful implementation of any technology in this sector and requires a paradigm that differs from other sectors to make up for this deficit and insure success. Recent discussions of Open Source's benefits have focused not only on the "free as beer" aspect of the software being available at no cost but also on the "information should be free" aspect. That is Open Source promotes an ethic of collaboration and philosophy of openness more common to the non-profit environment that proprietary development does not.

The reality is that Open Source has a cost of ownership attached to it that goes well beyond the initial pricing. Moreover the idea of non-profits collaborating on software development or anything else without some financial support or funder enticement is somewhat optimistic. Non-profits compete fiercely for limited financial resources that inhibit both cooperation and collaboration with other institutions. Many feel they own their information and constituents and that creates unique value for their institutions that they must protect. Non-profits do foster trusted source relationships with other non-profits just as for-profits foster co-opetition relationships with other for-profits – but the right incentives must be there for both to occur. The point is there is a danger of buying into the perceived benefits of Open Source and promoting its use on this premise alone. To derive real strategic benefit from Open Source on a macro level in the non-profit context one must appreciate the dynamics that dominate this sector's use of ICT.

There is a compelling reason for the non-profit sector to seriously consider Open Source as an alternative. Proprietary vendors have been making software piracy and even legal purchase much more difficult for erstwhile non-profits, particularly in the developing world, because they cannot afford to spend a lot of money on it. Between online registration and monitoring, regressive and costly software licensing fees and aggressive piracy policing, non-profits are caught between a rock and a hard place. Authoritarian governments can use software piracy of proprietary applications as an excuse to close down non-profits who don't agree with their policies. It's no wonder proprietary software vendors are seriously rethinking their donation and discount policies for this sector.

Unfortunately, for the typical non-profit wishing to set up and support a full scale Open Source environment from server to workstation and everything in between is currently a costly exercise – in training, maintenance and ongoing development and support. Not all the necessary applications exist or are production ready for the typical NGO wishing to use Open Source technology to install and not have to worry about it in the same way it deploys proprietary technology. Nor do the support mechanisms critical in supporting the ICT needs of the non-profit sector exist in many places. Some of you reading this article will no doubt be able to point to individual discreet cases of Open Source deployment in the non-profit context that were or were not successful. What I want to focus on in this article is not what determines if Open Source will continue to be deployed in case by case scenarios, but what will make it as ubiquitous and useful to the non-profit sector as E-mail is now.

What colors my perception of the Open Source alternative as it currently exists is my experience with software development. At one point in my career I was also the developer and chief technology support for an application distributed in twenty-six countries through a network of independent but affiliated student exchange organizations. This experience taught me a lot about the software development and maintenance cycle and how NGO's actually use technology. The most important lesson I learned was that software is never completed and requires a long-term relationship between its users its developers and its maintainers.

The very act of using software leads to a need to modify it. Inevitably users become familiar with it and develop more sophisticated requirements. These requirements beg enhancements and modifications to meet new needs, in addition to fixing outstanding bugs which inevitably arise. Then there are the advances in hardware and software underlying the applications we use. New computer chips, new versions of programming languages, new operating systems, etc. make upgrades to software that use these resources almost mandatory every two to four years. Otherwise one falls behind on versions and discovers certain functionality missing or not working in a previously functional application. Between user needs and the speed of technology advances, software typically needs to be modified every one to three years in order to stay relevant. That requires the commitment of dedicated technical staff over an extended period to maintain these applications.

Aside from the "free beer" aspect of Open Source, its promise to the non-profit sector lies in the open code base which allows developers around the world to collaborate on projects to produce or enhance new applications. This is expected to provide opportunities to develop a whole slew of new mission critical applications to meet non-profit needs at a reduced cost. There is just one problem. This assumes that there are a reasonable number of developers willing to devote time and effort for little pay to work closely with not-for-profit clients over significant periods of time measured in years to both develop and continue to upgrade these applications. But why have non-profits had such a hard time developing applications to meet their needs in the non-Open Source marketplace? Is the problem really that the slew of programmers buzzing around the non-profit environment couldn't get into the code to develop new systems or enhance them? I think not.

Experience tells me that non-profits typically don't have the resources to implement basic technology right out of the box let alone to support technical people to both develop and maintain their applications. There is a reason that technology support organizations like NPower and the Circuit Rider movement work in the non-profit context. It's because technology in this environment isn't about simply technology. It's about technology bundled with capacity and service. Capacity and service are what for-profits invest in internally so they can absorb and take advantage of the technology they implement. In the non-profit environment only the largest, most elite organizations, (typically those with the capacity to generate income) invest in internal technology departments. The rest require low cost non-profit technology service providers or consultants to meet their needs.

So how does the capacity and service model change in the Open Source context for most non-profits? Does the very act of making code accessible magically create a cadre of new and interested programmers willing to develop and maintain applications for the non-profit environment over years with few resources to compensate them? Do projects like the open sourcing of Ebase, the contact management system undertaken by Groundspring, or the development of the Martus Human Rights application undertaken by Benetech require continuous foundation subsidies of hundreds of thousands of dollars to be developed and stay relevant? That is certainly not a sustainable model, nor will it assist most non-profits in implementing these technologies. How does one insure that an Open Source application defined to meet the non-commercial needs of a group of NGO's in a particular sector will be supported long term and updated as it needs to be?

It is clear why Open Source application efforts such as Apache and Mysql work. These

applications are about developers creating products for other developers in order to enhance their own efficiency and productivity. In the end these products help anybody implementing a web server or database including non-profits. The constituency for these applications is huge -- Much larger for example than for an application focused on case management for battered women. It is also clear why end user Open Source applications like Open Office developed for a mass audience including for-profits and non-profits work as well. They have the benefit of well paid technical staff employed by companies who may wish to work with the code to enhance internal needs or to experiment on their off time. Some governments, which are beginning to mandate Open Source usage, may contribute technical support to these endeavors as well.

Non-profits certainly benefit from both the hard-core Open Source technical products like servers and databases and the mass market open-source end-user products. However, they aren't necessarily underwriting their development or enhancing the code themselves with phantom technical resources they cannot afford. In this sense, the non-profit sector's use of Open Source is not much different then their use of commercial applications. True, they are not paying retrogressive licensing schemes, (which all commercial application providers should rethink for this sector). However, they are not necessarily taking full advantage of the promise of Open Source either. They are still paying someone for long term technical support for applications they don't necessarily have a hand in customizing.

The fundamental question to be answered is how one underwrites and sustains the development and continued maintenance of mission critical Open Source applications designed specifically for the non-profit sector? Applications for monitoring, case management, customer relationship management, advocacy, knowledge management, web publishing, analytics, etc.? There are literally millions of non-profits all over the world with software application needs. How will Open Source assist in the development, implementation and maintenance of low cost, easily maintainable core applications that meet these needs? And how will these be underwritten long term?

REALIZING THE PROMISE

The promise of the Open Source methodology satisfying these needs will not be met by a few narrowly subsidized initiatives. It will require some dedicated strategically defined public support over a number of years to:

- 1) Define the core mission critical apps that most NGO's need.
- 2) Subsidize the base development of the core applications or at least open standards around these applications including the necessary documentation and training needed to implement them successfully.
- 3) Develop a programmer community around these applications along with some software development institutions that employ at least a few project leaders and senior developers to coordinate activities.
- 4) Tie them closely to the nascent non-profit technology support community that has arisen over the last few years so that the applications, once developed, can be both delivered and supported over the long term.
- 5) Develop a cost structure that is not prohibitively expensive for NGO's but that supports continued maintenance and development of the core applications.

I don't think this is going to happen without a proactive, well thought out strategy by a collaborative of progressive funders, developers and technology service providers. The dynamics that underwrite the long-term maintenance and costs of mass-market Open Source applications simply don't exist for the non-profit sector because they are not underwritten in the same way they are for the commercial environment.

To develop a Social Source development and implementation community involves dealing directly with the problem of limited technology capacity investment in the non-profit sector. The lack of internal infrastructure hampers the supplemental benefit of having subsidized developers and technology service providers also working to create a Social Source community. The funding community has started to deal strategically with a couple of technology service issues in the non-profit sector by supporting intermediary technology service organizations and data aggregators such as NTEN, Npower, Oneworld, APC, Itrainonline, Geekcorps, circuit riders, etc. These organizations serve as an external technology capacity substitute for non-profits that cannot afford the internal capacity. The inception of many of these intermediary organizations was subsidized heavily by the public sector. However, a sustainability model that collected reasonable fees for service was built into the business plan in order to maintain long-term viability and continued service. The model that supports technical support and training activity is instructive and needs to be duplicated for the software development activity. Moreover, these organizations must be supported to service new Open Source technologies just as they currently support proprietary technologies.

One issue that people not working in the technology space often fail to appreciate is that the technical discipline consists of a number of vertical specialties just as other disciplines do. Technical support and training is a very different animal than software development requiring different skill and mindsets. Supporting the technology service solution therefore does not solve the social software development solution. Most technology service organizations don't wish to be developers and most developers don't wish to be technology support organizations. It's instructive to note that a typical corporate IT structure also separates these specialty disciplines. In the non-profit environment the technology service organizations are stretched so thin simply focusing on their area of expertise that they cannot effectively do long term software development even if they wanted to. Non-profit technology service providers typically rely on pre-packaged applications that can be implemented and supported for their clients. They can go to the vendor if they need support and the vendor provides the updates.

Developing a viable social software sector requires not only viable technology service providers but also a social software development organization. Such an organization, which looks at the mission focused application space across NGO program and application areas, does not exist. I envision a Social Sourceforge with an added service and support arm that assists with prioritization, documentation and closer cooperation with the technology support organizations that implement and maintain the applications in the non-profit environment.

It is important to recognize in this discussion that successful social software development efforts do exist. There are initiatives like The Nonprofit Open Source Initiative and the development efforts of Civilrights.org to meet the demand of its organizational constituency. There are organizations like Benetech, Groundspring and Greenmedia Toolshed that are developing discreet Open Source tools for the non-profit sector. The Land Alliance Trust, Greenpeace, MIT and project OpenHand have all developed stable

sets of Open Source code. However, to deal with the larger strategic issues of unlocking the power of Open Source across NGO program areas and application categories I believe there needs to be a separate entity created. This entity, which I'll call Social Sourceforge is designed to aggregate volunteer developers to work on a variety of applications that are prioritized and defined in collaboration with technology service organizations, funders and the various NGO sectors they support. Social Sourceforge will act as:

- 1) A home base for development activities designed to meet a broad base of prioritized, mission focused application needs.
- 2) A place to actively foster a mission focused development community.
- 3) A documentation and training material depository for all applications on Social SourceForge.
- 4) The arbiter of open standards for the NGO sector across application platforms.
- 5) A catalyst spawning individual development efforts conforming to standards.
- 6) A place where individual developers come if they wish to interact with a vibrant mission focused developer community for support.

I am not suggesting that Social Sourceforge maintain a monopoly on Open Source development for the NGO community. However, at least one should be underwritten so that it can set a standard of excellence that others emulate. Npower and Techsoup do not occupy their niches alone, but they do set the bar for other endeavors that wish to provide the same quality of services.

Social Sourceforge cannot be all-volunteer because unlike the generic Sourceforge, its members are not subsidized by corporate underwriting for its developer's activities. It needs to employ a fulltime software project manager and a couple of senior programmer analysts that work with a board to define Open Source standards across application platforms. This staff will also prioritize and coordinate the various Open Source initiatives, plugging the volunteer programmers into the projects that need their assistance. Here I think entities like Idealist and VolunteerMatch will be extremely helpful working in collaboration with Social Sourceforge to match developers to projects. Coordination and consistency provided by a small paid technical staff is key however.

Initially, the public sector will need to underwrite the Social Sourceforge staff as well as the initial 'category-killer' application platforms for mission focused applications like monitoring, case management, advocacy, etc.. Along with application's design, a sustainability paradigm must be developed to maintain them over the long term. Social Sourceforge will see to the care and feeding of the developer community around mission-focused applications fostering both standards and rigorous documentation requirements.

Finally, it must be recognized that corporate IT has a methodology for prioritizing, financing, developing, and supporting its software technology projects. The various departments come together and manage this process under a project leader. In the non-profit context, these entities do not exist under one roof. Technology service and support organizations and the Social Sourceforge of developers are designed to emulate NGO internal capacity. However, they exist external to the organizations they support as discreet entities with vertical market specialties. To further complicate the situation, funding for these endeavors comes from another source; the various public funders that underwrite these activities.

The structure requires a coordinating neutral entity that brings together funders, technology service organizations, and the developer community to agree on issues of priority, development, marketing and distribution of the applications so they reach the broadest possible environment. This horizontal agency is what bridges the vertical specialty areas of funding, development, distribution and support. A couple of years ago, OSI together with a number of other funders recognized that one of the key issues of software development for the non-profit environment was not that applications didn't exist but that there was a gap between underwriting an application, developing it and distributing it to scale. Aspiration was created as a 501C3 to fill this gap and help bring key software technologies to the largest possible audience. Aspiration has done this successfully with a number of applications. However, it is still underutilized. Like the technology service providers and various Open Source development efforts in the non-profit sector, it is dealing with initiatives on a case-by-case basis. What it needs to do in concert with the other entities is to deal with the same issues on a sector wide basis - One that creates a strategic framework that defines the social software space, mirrors the SourceForge community and works with a variety of core application needs and funding priorities across the NGO sector. Such a coordinating entity may merge with one of the other pieces of this puzzle once a vibrant community is created and all the pieces have a history of coordinating and functioning in unison. Or, it may continue to exist drawing fees from this coordination activity. At the outset however, this entity must also be underwritten for the broader vision to work.

A visual representation of the Social Source community is provided below. The number of individual organizations is not as important as the need to have each component process. This model emulates an internal corporate IT structure and adapts it to the context of the external capacity model of service supporting the NGO sector.

PRODUCT PLACEMENT IN LEARNING ENVIRONMENTS:

FROM KEYSTONE-MAST TO MICROSOFT

By Steve Cisler

Technology companies have a long history of placing their products in schools and other learning environments. The reasons vary. Placement is done through in-kind donations, competitive grants, achievement awards, and funds earmarked for technology projects. Most of the companies see their products as ways to enhance education, and many will claim the revolutionary or transformative nature of their wares. All of them hope it will be a prelude to increased market-share.

One of the earliest examples of this in American schools was the Keystone View Company which manufactured stereographs and the hand-held viewing devices as well as projectors. The images were stereoscopic images of every place and activity imaginable.⁽¹⁾ Printed on rigid cardboard, these collections of high quality photographs were found in many homes, libraries, and schools. The company's education department was formed in 1898, and they enlisted famous poets like Carl Sandburg as well as notable educators to serve on their advisory board. By 1922 the company claimed that every school district in towns over 50,000 had what they called a Keystone System. One picture shows a class of young children, each one gazing into a stereopticon. Marketing litera-

ture promised that learning would be greatly improved once schools integrated this technology into their lessons. This promise of technology improving learning is echoed by company after company up to the present day.

After the stereopticon, the typewriter was marketed as a device that would transform the writing skills of young students. There is a study from the Bank Street School of Education dating from the 1930's that makes the same promises about student "transformation" that later showed up in the literature of education marketing departments of computer companies.(2)

One of the first examples of the use of computers in public spaces was started by Bob Albrecht of the People's Computer Company. PCC was not a company but a cooperative publication that started in the early 1970's. Albrecht had written some books for DEC (Digital Equipment Corporation was acquired by Compaq in 1998) and traded the work for a PDP-8, one of the first mini-computers that was owned by end-users and not just large companies or organizations. Later, PCC split off into a separate non-profit called Community Computer Center and worked out a deal with DEC for a PDP-11. Atari also made some donations of equipment. If "DEC" and "Atari" don't ring a bell, I recommend you read the Wikipedia (3) entries for these companies. In the 80's DEC was the second largest computer company in the world with 100,000 employees.

I worked for nine years at Apple which was the first computer company to donate computers to schools in a methodical way. My own role was running a grant program for public access centers and multimedia projects in libraries, museums, and later, community networks. This operated out of the Advanced Technology Group and was not tied to marketing. Donations were made for research, but of course it increased the good will toward the company by supporting unusual projects such as preserving indigenous languages, putting photo archives online (pre-Web days), and just providing access to the Internet in the early days of the public interest in the network.(4)

Other departments of the company had much more ambitious and well-funded projects to donate to schools. The most important was Apple Classrooms of Tomorrow that is no longer supported by the company but still remains influential in education circles.(5) Frequently, company supported research is highly suspect, but the legacy of this program remains strong even today.

The Apple Community Affairs department pioneered the donation of computers in non-profits (NGOs) and in 1997 to community technology centers. CTCNet in the United States received support for outfitting a number of labs in local CTCs. Finally, education marketing would make donations to influence future sales, and these were directed strategically at schools, researchers, education ministers, and other decision makers. I remember one marketing executive who was angry because I would not make a grant to University of Southern California library in order to clinch a big sale of Macintoshes on campus, but I was able to maintain relative independence in how I awarded equipment and software. My donations were not tied directly to making sales, but in a general way they were meant to influence opinion about Apple in the sectors where we donated (community networks, libraries, indigenous groups).

The above description demonstrates that different parts of a medium-sized company have different goals for their donations. This holds true for companies like IBM, HP, and of course Microsoft. All are meant to promote brand loyalty and sometimes dependence on a product line.

Smaller technology companies in manufacturing and telecommunications have used the promise of providing equipment and support for schools in some developing countries as a way of getting favorable treatment from the government authorities for the establishment of a branch of the enterprise or service. It is not bribery but just a way to get the bureaucracy or licensing agency to move and to differentiate the company from more "mercenary" competitors. In some cases the schools were asked to accept equipment that was expensive to maintain and use to full capacity, even if there was no initial charge.

At the 2003 CTCNet conference Gifts In Kind international "The World's Leading Charity in Produce Philanthropy" was distributing new software for free to non-profits affiliated with CTCNet. Last year they donated almost \$800 million in products including computers, software, office equipment, automotive parts, personal care products, and building materials. They also provide discounted services for ICT training and web design. There is a small registration fee that varies with the non-profit's budget. I asked the representative what the motivation was for the many companies that donated through Gifts In Kind. First of all, there is the tax deduction. Some want to do good, and this is a way with low administrative costs for the companies to help.

Toshiba, the giant Japanese hardware company lost a \$2.1 billion class action suit (while admitting no guilt in the matter), and the public is benefiting. Toshiba products are being donated through the Texas-based Beaumont Foundation to schools, libraries, individuals, and non-profits in the United States.(6) However, it's an equipment-only program, and by now everyone knows the other costs for training, integration, and support can exceed the cost of hardware and software.

In the past few years the large technology companies have shown a great deal of interest in developing countries. We have the high profile of HP's Carly Fiorina at the Digital Opportunity Task Force(7) that was formed prior to the rapid deflation of the Internet bubble and subsequently the shrinking of the much touted e-inclusion program. This program was influenced by C.K. Prahalad's article on selling to "the bottom of the pyramid" which tries to make the case for Western companies to open new markets for products and services to the poor. The phrase used by several companies including HP is doing well by doing good. This line of reasoning is criticized by some as the reaction of companies in countries with stagnant and declining markets looking for new markets. Many industries have too much production capacity so there is a strong motivation to establish new in order to "move more boxes" as we in the computer industry used to say.

AN AMBITIOUS NEW INITIATIVE

In January 2003 I was asked to help with a survey of telecenters (community technology centers) in a number of countries. Microsoft had engaged a large non-profit working in the development industry, Academy for Educational Development, to do a rush job. I serve on an advisory board for an AED/USAID consortium called Dot-Com Alliance and was also working on an AED project in Uganda at the time. The deadline for the research was before I returned from Uganda, so I did not take part. I did see queries from researchers posted on development and telecenter mailing lists, and I assumed the results would find their way into the Microsoft report.

In early June 2003 I received an inquiry from Julie Schoknecht at Catalyst Alliance (an

Accenture-sponsored non-profit). She said that her consulting group and World Links were doing a survey of telecenters and related networks around the world and wanted to interview me. Of course, as a consulting firm they did not intend to pay other consultants for their time, so I ignored it. A week later I began receiving inquiries from colleagues around the world about a Microsoft-World Bank initiative. It turned out all to be related. I replied to the Catalyst Alliance and World Links contacts to set up a phone interview.

World Links was a pet project of World Bank director James Wolfensohn. It has been spun off into a separate organization with a competent board that has managed to raise a lot of money to support its school technology programs around the world. The man who directed it is returning to the World Bank. The main activity of World Links has been setting up computer labs and training programs in high schools in developing countries. In Uganda and Zimbabwe, among other countries, some of these school computer labs have also been running as telecenters to provide fee-based services for people other than students. They hope this will be a model that will work elsewhere to make the other school projects "sustainable." World Links has received different kinds of support from Microsoft in the past: \$1 million in software, and more recently a large contract to do training (in Microsoft products), and now this telecenter research project.

In talking with the women gathering data for Microsoft, I shared what I knew about the status of community technology in some of the regions they are covering. They have divided the world into nine regions, and we only talked about Western Europe and Latin America. In Latin America and Europe some experts did not want to talk with them or declined to serve on an advisory board for the big initiative Microsoft was planning. The central board members helped plan this at a meeting in Paris earlier in 2003. It included people from North American aid agencies, World Bank InfoDev program, the World Economic Forum (the folks who meet in Davos), MIT's Media Lab, and World Tel, an ITU spin-off.

I told the World Links and Catalyst Alliance consultants if they had been more open about who they were working for, they would have a better response. "We had to sign NDAs," they replied. An NDA or Non-Disclosure Agreement is a favorite instrument of technology companies when they are going to reveal secret information to an outside party including partners, journalists, and financial analysts. Non-Disclosure Agreements are a standard way of trying to protect company secrets, but in a world where transparency is needed and in short supply (just look at the World Bank's rhetoric), the lack of transparency in this project has raised suspicions about the aims of Microsoft and the group.

People approached me with pointers, rumors, documents, and fears about what will transpire when Microsoft teams up with World Bank organizations and other national aid organizations. This article is not meant to betray any confidences or spread rumors, but those of you involved in telecenters and community technology centers should find ways of discussing this openly before the project is rolled out with great fanfare. This project will entail a lot of money for community technology learning centers/telecenters. There will be grants, annual prizes, and publicity for the community technology movement. On the business side there is telecenter software recently developed by Microsoft (in Spanish at least) which will be distributed for free at first and will be tested and improved just as happened with Explorer. There are, of course, alternatives to this software, but the parties who have developed it will not have the resources to publicize it in the same way as Microsoft does.

The points everyone should think about: what are the tradeoffs when you accept equipment and software donations from certain groups or companies? Of course you are expected to use the software. Most companies hope it will lead to great sales. A deep discount for the first version of an Office suite can lead to an organization that pays for upgrades and brings in more profit in the long run. Many places in developing countries continue to use pirated software, but some want their operations to be legal, yet they are not sure they can pay even the reduced license fees for commercial software.

WHAT DOES BILL GATES THINK?

Bill Gates is a very public figure, and he has spoken out on a number of issues besides Microsoft. Most forcefully he has committed a vast proportion of his wealth to solve very serious health problems, especially those where the market has failed and little research was being done to combat malaria and of course AIDS. In the interview with Bill Moyers on Public Broadcasting he said,

"So we should be doing the things that the normal approaches can't do, whether it's approaches to the AIDS vaccine or malaria or delivery systems. We've got to be out there and accept some kind of failure rate."(7)

He also related his experience in Soweto, South Africa, where he saw computer centers as a low priority in that community compared to dealing with AIDS, and that has driven the bulk of his philanthropic efforts. At the same time he sees the link between improving information flow with ICT donations and health problems because he funds very large programs for public libraries to provide access and training at no cost to people in Colombia, Guatemala, Chile, Mexico, as well as the U.S. and other developed countries, but it is much smaller than his philanthropic efforts for world health.

MICROSOFT AND OPEN SOURCE

Microsoft has some of the most popular applications in the world, but it is also challenged by the open source software movement, and the company has strategies to stop or inhibit the spread of this model for software development and support. Their statements on the subject have ranged from Steve Ballmer's comment likening open source to "cancer that attaches itself in an intellectual property sense to everything it touches," to claims that Microsoft likes and embraces open source. Microsoft backs a lobbying organization called Software Choice which was formed to persuade legislators not to pass laws that required the use of just open source products.(8) Open source as a way of working and sharing ideas fits very well with the community telecenter movement. This sort of ICT-enhanced collaboration may be more important than the code generated by the project. Will telecenters using and promoting open source clash with the axis formed by the cluster of organizations planning this Microsoft project? World Links claims that the program will not penalize telecenters that happen to be using open source solutions, but the evidence in other parts of the Microsoft/Open Source battlefield makes me skeptical.

In an April 2002 speech delivered to the Government Leaders' Conference in Seattle, Microsoft chairman Bill Gates likened the concept of open source to anti-capitalism. Warning developing countries against using software based on the Gnu Public License

(GPL), Gates said those who put development time into it are denying themselves the benefits of essential taxes.(9)

The DOT Force final report in 2001 delivered at the Genoa, Italy, meeting of the G8, had strong statements about open source that were removed after Microsoft Russia pounded on the table during a planning meeting and ranted about the dangers of open source. What was left in the document? Only these words: "Encourage the software community, including the open source and commercial software communities, to develop applications relevant to developing countries,"(10)

All non-profits, libraries, schools, universities, and community technology center should look at equipment donations and discounts with some of these factors in mind. Many of the proposed initiatives are described as "public-private partnerships" or "collaborations between civil society, government, and industry." Unfortunately, the genesis of these projects is not always clear, and the projects are rolled out with much fanfare and limited transparency about what tradeoffs have been made and what the ultimate goals are. For struggling projects in poor countries, it is difficult to reject any offer of assistance whether it is vaccine, corn, computers, or educational materials. The aid agencies and international organizations see the alliance with Microsoft as beneficial. It seems that each is hoping to leverage the resources of the others in order to carry out their own agenda. Let's hope that it benefits the people whom our grassroots groups serve and not just the goals of the council steering this new structure.

FURTHER READING

Larry Cuban, the Stanford University professor who is the most articulate critic about the use of computers in education has made available online the in-depth study, "Oversold and Underused: Computers in the Classroom". It goes into far greater detail on the ways that companies, allied with government, citizens and educators have pushed for massive spending on ICT in schools. It is an extremely useful background to similar initiatives in developing countries.

<http://www.hup.harvard.edu/pdf/CUBOVE.pdf>

NOTES

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THE ROLE OF THE ENGINEER IN THE INFORMATION AGE

By Arun Mehta

INTRODUCTION

When looking at technology, we barely see machinery, let alone the people who made it. We seem to take technology and its development for a given, neglecting the process of its creation. We live off the fruits of the tree, without examining its roots.

Technology is "the application of scientific knowledge to the practical aims of human life or, as it is sometimes phrased, to the change and manipulation of the human environment." As such, it has played a crucial role in human survival, allowing a physically weak species to marshal natural laws and resources in its defense. Since the harnessing of plant growth in agriculture, the taming of fire and the invention of writing, the fruits of technology have surrounded and transformed us. The cumulative effect of technological development has brought us to a point where technology is intertwined with every aspect of our lives. Yet, we aren't entirely comfortable with it. We only seem to notice technology when it breaks down.

There is passivity in modern society towards technology. While new products are continually brought to our attention through advertising, the degree of control most of us exercise is only in buying this product or that, and, at most, in telling our friends. This is perhaps comparable with the degree of control a couch potato exercises, through his remote, over the content that networks beam at him.

However, there is a segment of society that actually makes technology, which trolls the journals of science for new ideas, and looks at the reaction of consumers to old products, in designing new ones. These people also have the responsibility of keeping the old technology running and are the ones you call when products don't work as they should. These are, of course, the engineers, who belong to a "profession in which a knowledge of the mathematical and natural sciences, gained by study, experience, and practice, is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind." [] Going by this definition, the term engineer must equally apply to practitioners of "old" technologies, the farmers, carpenters, architects and plumbers, as it does to geneticists and computer programmers.

For a while, each technology must surely have been new and exciting, and during this time, technologists must have been looked at with interest at cocktail parties, as Internet engineers were during the Dot-Com boom, and geneticists are today. But the fate of the plumber is theirs in the long term, recalled only when things go wrong.

However, societies that grew affluent based on technology as most of Europe did, ignore

technology at their peril. If much of the best student talent does not head towards engineering, if European universities are not leaders in technological innovation, their engineers no longer the world's best at invention and the management of production, it must come as no surprise if jobs migrate to countries where societies treat the engineer with greater respect.

A spectacular example of the importance with which other societies treated engineers in recent times is available from the Soviet Union. Almost the entire generation of Soviet leaders that followed Stalin were engineers, including Krushchev, Kosygin, Brezhnev and Yeltsin. The probable reason for this was that while Stalin had little hesitation in wiping out everyone else, he must have appreciated that there was no way he could have beaten the Nazis, nor competed with the West, without engineers. When he died, these were the only people left, in any sort of leadership positions.

A Martian looking at Earth might imagine that engineers are the stars of a civilization that is totally dependent on technology. Yet, nothing would be further from the truth. Like the craftsmen who created medieval architectural and other masterpieces, most engineers remain anonymous, even the brilliantly successful ones.

How many people could identify the inventors of the digital computer (John Mauchly and J. Presper Eckert), a device whose importance in modern life is second to none? Alfred Nobel was himself an engineer par excellence. His invention, dynamite, is still widely in use in mining and construction.⁽¹⁾ That even he did not see fit to institute a Nobel Prize for engineering, is typical of the modesty of the profession. Perhaps the best example of societal inattention to engineers, though, is the case of Claude Shannon, whom few outside the profession have even heard of.

This genius discovered that Boolean algebra, an area of mathematics thought to have no practical use, was perfectly suited to the design of digital circuits. H. H. Goldstine, in his book *The Computer from Pascal to Von Neumann*, called this work "a landmark in that it helped to change digital circuit design from an art to a science." In 1981 Professor Irving Reed, speaking at the International Symposium on Information Theory in Brighton, England, said, "It was thirty-four years ago, in 1948, that Professor Claude E. Shannon first published his uniquely original paper, 'A Mathematical Theory of Communication,' in the *Bell System Technical Journal*. Few other works of this century have had greater impact on science and engineering. By this landmark paper and his several subsequent papers on information theory he has altered most profoundly all aspects of communication theory and practice." This paper has justifiably been called "the Magna Carta of the information age."

Shannon's work on information theory has also had significant impact on fields outside of communications, including linguistics, psychology, economics, biology, even the arts. Robert W. Lucky, executive director of research at AT&T Bell Laboratories, called his work the greatest "in the annals of technological thought", while IBM Fellow Rolf W. Landauer equated his "pioneering insight" with Einstein's. Claude Shannon died as recently as February 24, 2001, but the Internet, which is inconceivable in the absence of his insights, barely noticed. ()

If people pay no regard to the people who make technology, nor make any effort to understand them, they will find it hard to appreciate the logic of the direction it takes – for the inventor and the invention resemble each other. If the products of technology

often seem lackluster and unimaginative, maybe this is a reflection of a similar lacuna in most engineers. We can also take the analysis one level upstream. To understand why engineers turn out the way they do, one must look closer at how they, in turn, are made, at life in an engineering college.

THE DEFICIENT EDUCATION OF ENGINEERS

The manner in which engineering is taught is incredibly authoritarian and dull. The reason for this is not hard to find. As pointed out by Peter Senge and others, our modern education system was born during the industrial revolution, which faced a severe shortage of trained personnel. At the time, industrialists made a fortune by taking manufacturing out of the community and locating it in a new kind of space called a factory. Faced with a shortage of people skilled in manning these factories, the owners applied their tried and tested formula once again: they took education out of the community, and made it the responsibility of a new kind of factory called a school. Indeed, our schools are organized along the same principles as assembly lines, where the students are as parts moving in lockstep from one class to the next, while the teachers are like machines that impart education, within a highly authoritarian system. If a student cannot successfully pass the requisite tests, he is thrown out, not unlike a part that has failed quality control.

According to Senge, "While the assembly-line school system dramatically increased educational output, it also created many of the most intractable problems with which students, teachers, and parents struggle to this day. It operationally defined smart kids and dumb kids. Those who did not learn at the speed of the assembly line either fell off or were forced to struggle continually to keep pace; they were labelled "slow" or, in today's more fashionable jargon, "learning disabled." It established uniformity of product and process as norms, thereby naively assuming that all children learn in the same way. It made educators into controllers and inspectors, thereby transforming the traditional mentor-mentee relationship and establishing teacher-centered rather than learner-centered learning... The assembly-line education system is under stress. Its products are no longer judged adequate by society. Its productivity is questioned. And it is responding in the only way the system knows how to respond: by doing what it has always done but harder."^[i]

Is it any wonder that a system which discards human beings as scrap, produces so many terrorists and criminals? Those who survive it are almost brainwashed into believing, that having an opinion about anything outside of their narrow areas of technical competence is inadvisable. The syllabus pounded into them is needlessly voluminous and difficult, of which a practicing engineer actually ever uses only a very tiny fraction. The teachers typically have almost no industrial experience, nor do students have any regular interaction with industry. Could anyone imagine a medical school without an attached hospital, where the teachers have almost never seen a patient?

Then again, the assumption in engineering education seems to be, that technology is more or less all that the engineer needs to know. Some rudimentary humanities are taught in engineering colleges, but the central nature of non-technical matters in the professional life of an engineer is hardly emphasized. An engineer must be able to read books of accounts, hire and manage subordinates, keep on the right side of intellectual property law, not to mention the diverse legislation applicable to the operation of

machinery, and the running of a firm. Instead of these, the engineer is taught equation upon equation, the practical use of which is hardly evident.

It hardly comes as a surprise, therefore, that this profession attracts few women. Even among the men who join, is a very high proportion of, to say the least, poor communicators. Yet, these poorly equipped and trained people are the ones entrusted with running critical industrial establishments, and can be held partially responsible for such disasters as the Union Carbide plant in Bhopal, and the nuclear reactors in Chernobyl and Three Mile Island.

THE GAP BETWEEN THE HUMANITIES AND ENGINEERING

There is much that can be done to improve this situation. For a start, what is clearly needed for a better understanding of technology and its dynamics is greater interaction between the engineering and the humanities departments in universities. Such interaction is rare: often, the technical university is the other end of town, and even where it isn't, the mental gap is large: students from these disciplines don't take each other's courses, unless they are forced to.

A laudable attempt to bridge this communication gap, is Robert Pirsig's "Zen and the Art of Motorcycle Maintenance." He shows how tackling repair problems that seem mundane, can be a highly creative, perhaps even spiritual activity. As he puts it, "Flight from and hatred of technology is self-defeating. The Buddha, the Godhead, resides quite as comfortably in the circuits of a digital computer or the gears of a cycle transmission as he does at the top of a mountain or in the petals of a flower. To think otherwise is to demean the Buddha...which is to demean oneself."

Bridging this gap has become far more important, now that the world is changing very rapidly, through advances in the field of information technology. Many new professions and industries have been created, including programming, web designing and systems administration. Others, such as mail and publishing, have been dominated, while other, like typesetting, even destroyed. Many big industries, such as music and telecom, are reeling under its impact. TV and cinema may be next.

With the Internet becoming a crucial part of many aspects of human existence, it becomes necessary for students from the non-technical parts of the university to learn not only how to make use of the facilities that software engineers provide, but also to become developers themselves. It isn't that hard to learn the requisite amount of programming to do that.

In this, programmers have a role to play too. We have come a long way from the time that programming used to be done in the 0's and 1's of machine language. Developments such as Fortran, the spreadsheet, the relational database, Logo and Visual Basic have all made programming easier for the non-expert. A little more effort in this direction would bring many more non-technical people into the fold of Internet developers, and greater interaction between their disciplines.

Now that technology is receiving unprecedented media attention, so are its creators. Related, perhaps, to the relative newness of the Internet, there is now more glamour to be found here, than in conventional branches of engineering. A student contemplating a

choice between a career in marketing and computing can ask herself the same infamous question that Steve Jobs used, to convince John Sculley to leave the giant Pepsi corporation for the then tiny Apple: "Do you want to spend the rest of your life selling sugared water, or do you want to change the world?"[] Indeed, there are many on the Internet who can lay claim to having significant part in changing the world: the members of the Internet Engineering Task Force, those in the open source movement, those who devised the software for mailing lists, chat, peer-to-peer file sharing, Internet Telephony...

GILMORE'S THESIS

For a new technology to replace an older one is nothing new. Such innovation generates plenty of money for the industrialist, if the buyer can be persuaded to replace old products. However, on the Internet, in addition to an economic component, the role of the engineer has taken on an entirely new dimension, one that makes it vital for engineers to pay closer attention to what they can learn from the humanities departments. John Gilmore said, "The Internet treats censorship as a defect, and routes around it." This is a characteristic with political import. It was Arthur Koestler who said (I believe) that all it needs for the demise of authoritarianism is the free flow of information. Combine the two statements, and it would seem that the Internet and authoritarian regimes are incompatible. How does technology assume such political overtones?

Partly, what Gilmore said is a statement about the basic design of the Internet, which had, as one of its objectives, robustness. If a part of the network became defective, the rest could automatically reconfigure itself, essentially routing around the defective part. The technology underwent a veritable test by fire during the Gulf War. Iraqi defense communications, built on the same technology that powers the Internet, could not entirely be taken out, no matter how hard the powerful opposition tried.(i)

This characteristic of the Internet is also a consequence of the relative lack of sophistication in decision-making that electronics is capable of. The Internet is a highly automated communications medium, and any process, which cannot be run by electronic machinery autonomously, is expensive and doesn't work very well on the Internet. However, as computers become increasingly sophisticated, their capabilities will grow, and this could change.

What started out as sound engineering design, has, with the growing importance of the Internet, become something far more: a serious threat to the manner of functioning of authoritarian countries such as China. No less serious is the damage that the music industry perceives peer-to-peer networks causing it. The movie business worries that, as Internet bandwidth improves, it will be next. Yet, try as they might, such political and economic powers seem powerless in influencing the direction of technology development on the Internet.

DIRECTING TECHNOLOGY DEVELOPMENT ON THE INTERNET

What is indeed unique about the Internet as a technology is the manner in which it develops. Arguably the only significant governance the Internet enjoys, is that of the Internet Engineering Task Force. These people manage a process that ensures that the Internet keeps acquiring new abilities at a furious pace, which leaves policy-makers and the legal system far behind. The bureaucrats at international decision-making bodies such as the UN must wonder how it maintains this speed, in a process that is remarkably

inclusive, consensual, and transparent.

The IETF doesn't take decisions in favour of one approach or the other: if even after thorough discussion, there is a difference of opinion on how a certain objective is to be achieved, all the variants can be tried out, without fear of doing any serious damage. In characteristic modesty for an engineering body, the standards that the IETF encourages the Internet to follow are published as "Requests for Comment." If after some experience with the variants, one stands out, a new RFC, pointing this out, supersedes the earlier one, and the discussion moves on to other objectives.

Handed earth-shaking power, engineers have come up with a process to channel it effectively. This is hardly unfamiliar territory for them: learning how to harness power is what they have practiced since the beginning. The difference this time is that decision-making relating to the development of technology is not taking place behind the closed doors of conference rooms. The reason why the Internet turned out different is that engineers and others interested in the development of technology could communicate.

Imagine, for instance, how the pharmaceutical industry might be different, if it were to use the Internet model for development. To start with, molecules would be open-source: companies would not have to pussyfoot around the patents of their competitors, and reinvent the wheel: they could focus on improving medication that was proven. Therefore, testing costs would go down. With the raw materials available locally almost everywhere, production could be local too. There would be no marketing costs (ask Google). And finally, without IP costs, the price of medication would be only marginally higher than raw-material costs, i.e. almost nothing. Many more lives would be saved.

However, the problem that pharmaceutical companies faced, that Internet ones did not, was that their products could maim and kill people. Therefore a huge bureaucracy became involved in deciding what was researched, tested, and approved for sale. Costs went up, and the answer that the industry found, was to bring in the concept of intellectual property, which made its products vastly more expensive, and the process of designing and marketing them, terribly inefficient.

Is the Internet model applicable in the rest of industry? It would be worthwhile to find out. The benefits to society of applying the Internet model for decision-making in technological development would be immense. In effect, this would be a much-needed extension of democracy into a vital aspect of human existence.

For the corporate sector, management of technological change is a major problem. Guess wrong, and the future of the company might be at stake. The Internet approach would dramatically cut down development costs and risks – for many, in this period of uncertainty, that might be preferable to the current situation, where the winner usually takes a large share of the market, and the losers go under, shedding jobs as they go.

THE EDUCATION OF ENGINEERS

In light of the added responsibility that the Internet thrusts on the profession, a re-examination of the education imparted to engineers becomes vital. People with such power need to be taught ethics, and have a clear understanding of legal aspects of their work. For instance, if the engineers who worked for Napster had a better appreciation of copyright law, the company might well have survived its legal battles with the music industry.

Engineers often have to make business plans these days, so financial skills are essential. Most important, though, are communication and teamwork skills, including how to participate in and chair meetings, including online ones.

It is also a mistake to think that the education of an engineer is a one-time affair. According to Papert and Caperton, "Digital technology in the workplace requires a new definition of "basic skills". The transformation of work requires much more than a mastery of a fixed curriculum inherited from past centuries. Success in the slowly changing worlds of past centuries came from being able to do well what you were taught to do. Success in the rapidly changing world of the future depends on being able to do well what you were not taught to do."[i] Engineers must, therefore have ready access to their teachers and colleagues in the event that they need to learn something new, or relearn.

A far more holistic approach to engineering education has become necessary. Engineering colleges focus almost exclusively on science and technology subjects, ignoring other needs of their students. However, given the limited background and skill sets of faculty members at these colleges, one really cannot expect much more of them. It is time to bring the community of engineers back into the process of engineering education – both as lifelong students, and teachers.

At the same time, it is essential that the engineering college become a more active participant in the world around it. Many problems have technical solutions, and the good engineering college is one that participates actively in solving local problems. At the same time, when issues relating to the growth of technology and its harmful effects are debated, teachers and students at engineering colleges need to bring technically informed opinions into the debate.

An area demanding urgent attention by engineering faculties is the situation of the physically challenged. Modern technologies can transform their lives, allowing them to participate as equals in work, play and social life. However, the products available for the physically challenged are horrendously expensive, and yet only scratch the surface of their needs. What is needed here is for the engineering departments of software, electronic hardware and machine design to come together with the physically challenged and the organizations that cater to their needs to develop low-cost, "open-source" solutions that industry all over the world can manufacture.

Even better would be for engineering colleges to make special efforts to teach these skills to the physically challenged, so that they themselves can solve their own problems. The same applies to other segments of society facing problems that technology can solve. In this situation, teaching becomes a vital role that engineers can play in society.

Distance learning technologies running on the Internet offer an excellent platform for engineers to participate in courses as teachers or students, either from home or the workplace. Chat rooms that offer quality audio-conferencing, text chat and shared whiteboards are now commonplace. Facilities such as this would also make it simpler for non-technical people to participate in the education of engineers, and vice-versa.

No longer can it be acceptable, that engineering education takes place in an environment divorced from industry. The PC is a potential software factory, so it is far easier to train people "on the job." Indeed, if students are required to participate in open-source development projects at portals such as Sourceforge.net, they will not only learn highly

useful technological skills in the company of their seniors in the profession, but also imbibe better attitudes towards the ownership of ideas. The rapid pace of change in the IT environment also gives the young a relative advantage, making it harder for their teachers to behave in authoritarian fashion.

The Internet has brought many changes for engineers. It has diminished their anonymity and isolation, increased their importance, taught them communication skills and forced another look at the manner in which they are educated. A necessary change in the role of the engineer in the information age is that she now also needs to be a student for life, and also become a teacher.

COLOPHON

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